CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF CITY PLANNING

ENVIRONMENTAL IMPACT REPORT

505 MONTGOMERY STREET

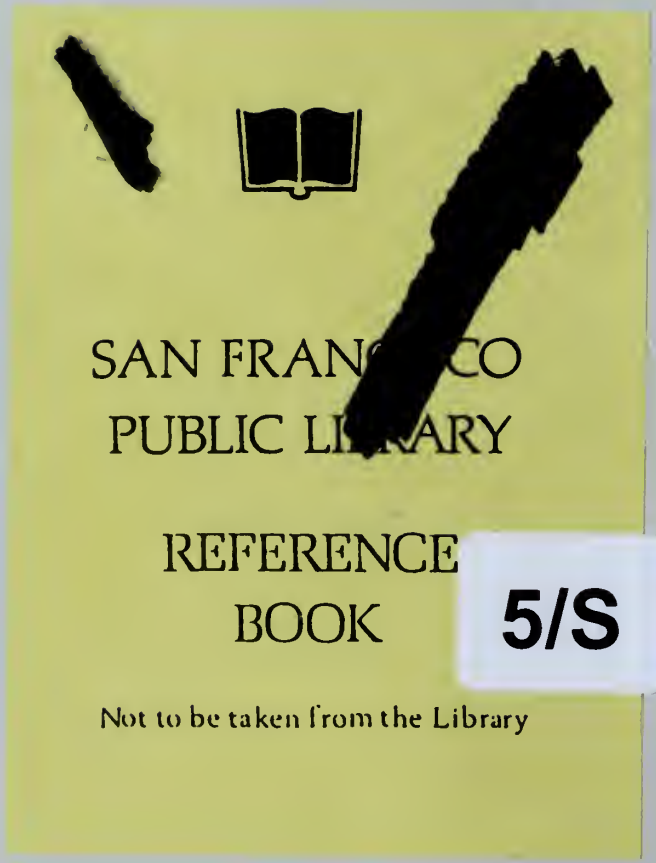
DRAFT 82.463E

PUBLICATION DATE: NOVEMBER 25, 1983

PUBLIC COMMENT PERIOD: NOVEMBER 25, 1983 – JANUARY 12, 1984

PUBLIC HEARING DATE: JANUARY 12, 1984

WRITTEN COMMENTS SHOULD BE SENT TO THE ENVIRONMENTAL REVIEW OFFICER, 450 McALLISTER STREET, SAN FRANCISCO CA 94102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I. SUMMARY

A. PROJECT DESCRIPTION

The Empire Group proposes to construct a new office building and refurbish the exteriors of two existing buildings, with a variety of street-level retail uses. The sponsor's objectives are to realize a return on investment through the construction of a high-quality building, which would contribute to the vitality of the area and preserve the scale of a portion of Commercial and Sacramento Sts. The project architect is Skidmore, Owings & Merrill.

The project site comprises Lots 5, 6, 6A, 7, 8, 9, 10, 11, 27 and 28 in Assessor's Block 227, at the northwest corner of Montgomery and Sacramento Sts., and contains about 26,170 sq. ft. The site is occupied by ten buildings, containing office, banking, restaurant, and retail uses. Eight buildings, on Lots 5, 6, 6A, 7, 8, 9, 10 and 28, all on the eastern part of the site, would be demolished for a new office tower with ground floor retail space. The remaining two buildings on Lots 11 and 27, on the western part of the site, would be retained and refurbished.

The tower would be 350 ft. high with 26 stories, including ground-floor lobby and retail space, 24 floors of office space, and a mechanical level, plus one basement level. Above the 255 ft. level (about the 19th floor), the building would be set back on all four sides. The street level would contain about 9,900 gross sq. ft. of retail space, and the rest of the tower (exclusive of mechanical space) would contain about 327,250 gross sq. ft. of office space, a total of about 337,150 gross sq. ft. There would be an additional 29,240 gross sq. ft. of space in the two retained buildings (2,200 gross sq. ft. retail and 27,040 gross sq. ft. office). The 8,000 sq. ft. of office space on the ground floor of 640 Sacramento St. (Lot 11), to be retained, may be converted to retail use. The extent of this conversion is not known at this time. Total office space for the project would be 354,290 gross sq. ft., and total retail space would be 12,100 gross sq. ft., a total floor area ratio (FAR) of 14:1 over the entire site.

The tower's office entrance would be on Montgomery St.; entrances to the ground-floor retail space would be on Montgomery, Sacramento, and Commercial Sts. Access to two off-street loading spaces and a ramp to the basement garage would be on Sacramento St. The garage would contain 23 parking spaces.

B. MAIN ENVIRONMENTAL EFFECTS

LAND USE AND ZONING

The City Planning Code zoning classification for the site and surrounding area is C-3-O, Downtown Office District. The eastern portion of the site, including Lots 5, 6, 6A, 7, 8, 9, 10 and 28, is in a 400-I Height and Bulk District, while the western section, Lots 11 and 27, is in a 320-I Height and Bulk District. Project dimensions and gross floor area would meet the 14:1 Floor Area Ratio (FAR) limit and other Planning Code requirements for the site.

HISTORIC, ARCHITECTURAL AND CULTURAL RESOURCES

The project would demolish eight of the ten buildings on the site. Six of the eight buildings are rated "C", for contextual importance, by the Foundation for San Francisco's Architectural Heritage (in the Splendid Survivors survey, or the later expanded C-3 District survey). The project would preserve two buildings on the site, also rated "C". No site buildings are on the City's List of Architecturally and/or Historically Significant Structures in the Downtown. The older, low-rise buildings to be demolished are part of the context of designated City Landmarks in the project area (such off-site landmark buildings include Jack's, at 615 Sacramento St., and the Old Sub-Treasury, at 608 Commercial St., both across their respective streets from the site).

URBAN DESIGN AND VISUAL QUALITY

The proposed office tower would be visible from street level on Sacramento, Montgomery and Commercial Sts. The two site buildings proposed to be retained, 638-640 Sacramento St. and 653-655 Commercial St., would maintain

the scale of these portions of the two streets. The tower would be similar in scale to other structures recently built, under construction, or approved in this portion of the Financial District. It would contrast in scale with the low-rise structures on Commercial St. and Sacramento St. and other development to the west. The project would obstruct views from lower floors of existing or under-construction high-rise buildings, including the Transamerica Pyramid and the Bank of Canton headquarters. From Portsmouth Square, the project would be visible and partially block views of some buildings to the southeast; it would not obstruct any street-level views of the Bay. It would be visible as part of a group of office towers on Montgomery St. between Sacramento and Washington Sts. The project would be visible in the downtown skyline from long-range viewpoints on Nob Hill and Russian Hill; it would not be a major visual focus because of the prominence of other taller structures.

SHADOW AND WIND

The project would increase morning shadows on Portsmouth Square in mid-winter/early-spring and mid-summer/early-fall months. The maximum effect would be from early March to early April and from early September to early October, when the project would shade up to about 40% of the whole square, from about 8 a.m. to 9 a.m. in March/April (from 9 a.m. to 10 a.m. in September/October). (Other portions of the park are, or will be, shaded until about 8:45 a.m. (9:45 a.m. Daylight Savings Time) by existing and under-construction buildings.) The project would add to mid-day shading of Commercial St., fronting the site, and the City Landmark Old Sub-Treasury Building.

The project would increase wind speeds on Commercial St., Sacramento St., and along Montgomery St. The project would not cause any wind speeds to exceed the 11 mph pedestrian comfort criterion. At the northeast corner of Montgomery and Clay Sts., existing northwest wind speeds would be 12.2 mph, and proposed project conditions would be 11.7 mph.

TRANSPORTATION, CIRCULATION AND PARKING

The project would generate about 4,720 new person-trip ends per weekday, 760 in the p.m. peak period, and 490 during the p.m. peak hour. The project would thus generate about 1.1% of the total peak period person-trips for cumulative

development (under construction, approved and under formal review) in the Downtown.

Afternoon peak period transit ridership generated by the project would be about 2% of the projected cumulative transit use increase. Trips expected to be generated by cumulative development, with or without the project, would cause most Muni lines serving the Downtown area to operate beyond existing maximum recommended capacity (defined as 150% of seated capacity) during the p.m. peak hour. Planned increases in capacity would accommodate peak period demand except for the Muni northwest corridor. With planned service expansion, other transit agencies' future loads would be within each carrier's total future capacity (except for AC Transit, which has no plans for transbay service expansion.)

Sidewalk operations, currently in the impeded range on Montgomery St. and Sacramento St. during both the noon hour and the p.m. peak hour, would continue in this range with the addition of cumulative development, and with the further addition of project pedestrian flows. Crosswalk operations at the Sacramento/Montgomery Sts. intersection would continue in the impeded range, during both the noon and p.m. peak hours, with the addition of cumulative development. The addition of project pedestrians to cumulative flows would change the Sacramento St. crosswalk operation to the lower end of the constrained range during the noon hour.

The bridge and freeway system serving the City is currently near capacity during peak hours. The project would imperceptibly lessen the Level of Service of traffic operation on the street system relative to existing-plus-cumulative conditions. Increased delay, from cumulative traffic at the intersection of Washington/Battery Sts. and Clay/Front Sts. would probably cause a redistribution of travel patterns to less-traveled routes and, potentially, a shift from single-occupant automobiles to public transit, carpools, vanpools or bicycles.

Long- and short-term cumulative downtown parking demand, including the project, would be 21,900 spaces, of which the project share would be about 1%. The project would provide 23 on-site parking spaces and would not displace any existing spaces. The cumulative demand for the whole downtown

area, including the project, would create a theoretical net deficit of about 14,800 spaces.

The project would have one 35-ft.-long and one 25-ft.-long off-street loading space, and would meet City Planning Code requirements. It would not meet loading space standards adopted as policy by the City Planning Commission in Resolution No. 9286, which would require three 35-ft. loading spaces for the project.

AIR QUALITY

Project-related vehicle traffic would add to regional pollutant emissions. The project would not directly conflict with the control strategies of the 1982 ABAG Bay Area Air Quality Plan and, of itself, would have no measurable impact on citywide or regional pollutant concentrations, or on the frequency of standards violations. It would incrementally impede the objectives of the plan by generating additional pollutant emissions in San Francisco and the Bay Area. Although the project, in conjunction with cumulative development, would add to carbon monoxide (CO) concentrations, the projected effects of existing state and federal emission controls on new vehicles would more than offset the growth in emissions due to increased traffic volumes.

CONSTRUCTION NOISE

Project construction would increase noise levels in the project vicinity during the 19-month construction period. Pile-driving would not occur. Highest average construction noise levels, about 79 dBA, experienced in offices, stores, and residential uses near the site would interfere with speech. Daytime sleepers could be affected up to a one-block radius. Noise levels at the Chinatown Holiday Inn on Kearny St. at Washington St. would not be expected to interfere with sleeping. The KABL radio station recording studio at 632 Commercial St., across the street from the project site, would not be adversely affected, because the studio is located in the northern portion of the building and does not front the project site.

ENERGY

Annual building energy consumption (at point-of-use) would be about 122,400 British thermal units (Btu) per sq. ft., compared to the 126,000 Btu performance standard of Title 24 of the California Administrative Code. Project operation would consume (at-source) about 39 billion Btu of electrical energy and about 2.3 billion Btu of energy from natural gas. Project-generated travel would consume about 17 billion Btu from vehicle fuel.

EMPLOYMENT, HOUSING AND FISCAL FACTORS

After completion, the project would accommodate a total of about 1,480 permanent full-time jobs, an increase of 1,220 for the site. About 1,440 additional jobs in the Bay Area would result from the employment multiplier effect of project operation. The project would require about 200 person-years of construction labor. About 310 additional person-years of employment would be generated in the Bay Area, as a result of the multiplier effect of project construction. The project could generate about 130 to 270 new households in San Francisco, and about 560 new households elsewhere in the Bay Area. According to the City's Office Housing Production Program formula, the project would generate a net demand of 270 housing units in San Francisco.

The project, after occupancy in 1986, would generate about $1.18 million annually in total property, payroll, sales, gross receipts and utility tax revenues to the City's General Fund, a net increase of about $1.03 million.

The project would probably have an initial fiscal benefit to the City. Because revenues would probably increase at a slower rate than costs, as a result of Proposition 13 limitations on property tax increases, cumulative costs of providing services to currently proposed and approved development could eventually overtake the revenues generated. This assumes that no new revenue sources are found, costs of city services increase and the rate of new development declines.

C. MITIGATION MEASURES

Major measures identified that would mitigate potentially significant environmental effects include the following:

URBAN DESIGN AND VISUAL QUALITY

Measures Proposed as Part of the Project

- The project would retain two buildings on the site, 638-640 Sacramento St. and 653-655 Commercial St.; these would maintain the scale of development for part of Commercial and Sacramento Sts.

- The project would include ground-floor commercial uses in the new tower and the retained buildings, fronting Commercial, Montgomery, and Sacramento Sts., to maintain pedestrian interest.

TRANSPORTATION, CIRCULATION AND PARKING

Measures Proposed as Part of the Project

- Should Ordinance 224-81, which would require the sponsor to contribute funds for maintaining and augmenting transportation service in an amount proportional to the demand created by the project, be declared invalid by the courts, the project sponsor has agreed to participate in any subsequent equivalent mitigation measures adopted in lieu thereof that are equitable and legal, which the City adopts to apply to all developments which are similarly situated.

- Use of transit facilities would be encouraged by the on-site sale of BART, MUNI, and Golden Gate Transit passes. Carpooling/vanpooling and flex-time would also be encouraged.

- Construction truck traffic would be regulated to avoid peak-hour traffic congestion. Construction activity would be coordinated with other concurrent projects to minimize cumulative traffic effects of lane closures and street excavation.

- The Commercial St. frontage of the project would include improvements proposed in the San Francisco Center City Pedestrian Circulation and Goods Movement Study, to enhance Commercial St. as a pedestrian-oriented street, including decorative striping of the roadway, conformity with no parking on the south side of the street, and sidewalk posts to deter illegal parking. Improvements in the public right-of-way would require approval by the Department of Public Works. The project would include decorative sidewalk paving and street trees along its Commercial St. frontage, in addition to the measures proposed in the Center City Circulation study. The project sponsor would consult with the Bank of Canton, to coordinate design of Commercial St. improvements with those proposed or already completed as part of that project.

- Paving, landscaping and structures in the sidewalk area (subject to Department of Public Works approval) would be designed to minimize interference with pedestrians.

- The project sponsor would, in consultation with the Municipal Railway, install eyebolts or make provisions for direct attachment of eyebolts for Muni trolley wires on the proposed building wherever necessary or agree to waive the right to refuse the attachment of eyebolts to the proposed building if such attachment is done at City expense.

Other Measures

- Pacific Gas and Electric Company would coordinate work schedules with other utilities requiring trenching so that street disruption would take place during weekends and off-peak daytime hours (so that area residents would not be disturbed at night). This measure is the responsibility of the CULCOP.

- The loading area could be redesigned to provide three off-street loading spaces, each 35 ft. in length, in compliance with City Planning Commission Resolution No. 9286. The sponsor has rejected this measure because proposed project loading spaces meet existing Planning Code requirements, and because provision of three loading spaces would reduce project frontage on Sacramento St. proposed for retail use.

AIR QUALITY

Measures Proposed as Part of the Project

- During dry-season excavation, unpaved demolition and construction areas would be sprinkled with water to reduce particulate emissions by about 50%.

NOISE

Measures Proposed as Part of the Project

- As recommended by the Environmental Protection Element of the San Francisco Comprehensive Plan, an analysis of noise reduction requirements would be prepared for the project sponsor, and recommended noise insulation features would be included as part of the project.

- The general contractor would construct barriers around the site and around stationary equipment, to reduce construction noise by as much as five dBA.

- The general contractor would, to the extent possible, locate stationary equipment in pit areas or excavated areas which serve as noise barriers.

- Construction activities would be limited to hours between 7 a.m. and 7 p.m.

Other Measures

- To reduce construction noise effects in offices at 632 Commercial St. (KABL Radio), across the street from the site, office uses fronting the street in that building could be relocated to less exposed areas of the building. Alternatively, the project sponsor could pay for covering the Commercial St. windows with plywood, plastic, glass or gypsum board and for gasketing entry doors during project construction. The construction contractor and project sponsor could establish liaison with the building owner and tenants to schedule project construction activities to reduce noise effects in the office space.

These measures are under consideration by the project sponsor. The sponsor would make a decision on measures to be implemented at the start of project construction, in consultation with the building owners and tenants of 632 Commercial St. The decision on the measures would be based on the feasibility of relocation of offices within the building and the potential need to maintain openable windows.

ENERGY

Measures Proposed as Part of the Project

- The project would be more energy efficient than State Title 24 requires. To conserve electrical energy, the project would include multiple light-switching; a variable air volume air-conditioning system; and an outside-air/return-air economizer cycle. A carbon monoxide monitoring system would control garage ventilation to avoid unnecessary operation of fans.

EMPLOYMENT, HOUSING AND FISCAL FACTORS

Measures Proposed as Part of the Project

- The project sponsor would mitigate the net housing demand of 270 units generated by the project, through off-site development or rehabilitation of vacant units in San Francisco, or by providing financial aid to housing development as provided for in the City's Office Housing Production Program.

D. ALTERNATIVES TO THE PROPOSED PROJECT

1. NO-PROJECT ALTERNATIVE

The no-project alternative would retain all existing structures on the site in their present state. Environmental characteristics of this alternative would be the same as with current conditions.

2. DOWNTOWN PLAN ALTERNATIVE

Alternative 2 would be a project consistent with planning controls proposed in The Downtown Plan - Proposal for Citizen Review, August 1983. The alternative would develop a new structure on most of the site, except for 653-655 Commercial St., at the western end of the site, which would be retained. The new building would use the total allowable 10:1 FAR proposed in the Downtown Plan, plus additional floor area available from Transfer of Development Rights (TDR) from other sites in the C-3-O district, for a total FAR of about 13:1 and a floor area of 336,740 sq. ft., compared to 366,390 sq. ft. for the project. The plan proposes a 250-ft. height limit for the site and would permit higher height limits for mechanical or penthouse space within the volume formed by planes sloping inward from the outer edge of the roof at a 50-degree angle with the horizontal. The alternative would thus be 294-ft. tall, with 19 stories, compared with 350 ft. and 26 stories for the project. The alternative would meet Downtown Plan bulk limits, with a series of setbacks, at about the 70-ft. and the 200-ft. elevations.

This alternative would alter the scale of a somewhat larger portion of Sacramento and Commercial Sts. than the project, by demolition of an additional low-rise building. The alternative would be less visible from mid- and long-range viewpoints, because of lower overall height compared to the project, and would cast shorter shadows on Portsmouth Square in mid-winter/early-spring and mid-summer/early-fall mornings than would the project.

Transportation, circulation, parking, air quality and energy impacts of this alternative would be proportionately less than those of the project, as the floor area of the alternative would be about 92% of that of the proposed project.

2A. DOWNTOWN PLAN ALTERNATIVE: NO SHADOW ON PORTSMOUTH SQUARE

Alternative 2A would be similar to Alternative 2, above, except that the new building would be 260 ft. and 17 stories tall, compared to 350 ft. and 26 stories for the proposed project, and 294 ft. and 19 stories for

Alternative 2. Total gross floor area on the site would be about 322,000 sq. ft. (an FAR of about 12.3:1), compared to a total of 366,390 sq. ft. for the project, and 359,740 sq. ft. for Alternative 2.

The reduced height of this alternative would result in no new shading of Portsmouth Square after 8 a.m. Standard Time (9 a.m. Daylight Saving Time), between March 21 and September 21, the critical times for solar access to the Square proposed in the Downtown Plan. Transportation, air quality, energy, employment and housing impacts associated with this alternative would be proportionately less than with the project, because the total floor area of the alternative would be about 88% of the proposed project floor area. All other effects would be similar to those of the project.

3. PROJECT WITH NO PARKING AND WITH LOADING SPACES CONFORMING TO PLANNING COMMISSION RESOLUTION NO. 9286

This alternative would be the same as the proposed project, except that no parking would be provided, compared to 23 spaces in the project. Three off-street loading spaces would be included, compared to two in the proposed project.

The provision of no on-site parking would respond to San Francisco Master Plan Transportation Element policies to discourage new parking within the Downtown Core. Provision of three off-street loading spaces, each 35 ft. in length, would be consistent with the loading space criteria of City Planning Commission Resolution No. 9286, based on the loading space demand formula in the Center City Pedestrian Circulation and Goods Movement Study.

The provision of no on-site parking would reduce project-related vehicular traffic near the site; this would not change Levels of Service at nearby intersections from those projected for the project. The provision of three off-street loading spaces would reduce demand for existing curb loading spaces on the Montgomery St. frontage of the project site. All other environmental effects of the alternative would be the same as those of the proposed project.

II. PROJECT DESCRIPTION

A. SPONSOR'S OBJECTIVES

The Empire Group, of San Francisco, proposes to construct an office building and refurbish the exteriors of two existing buildings, with a variety of street-level retail uses. The sponsor's objectives are to realize a reasonable return on investment through the construction of a high-quality building, which would contribute to the vitality of the area, be architecturally compatible with its context, and preserve the scale of a portion of Commercial and Sacramento Sts. The building is proposed to be energy-efficient. The project architect is Skidmore, Owings & Merrill, of San Francisco.

B. PROJECT LOCATION

The project site consists of Lots 5, 6, 6A, 7, 8, 9, 10, 11, 27 and 28 in Assessor's Block 227, at the northwest corner of the intersection of Montgomery and Sacramento Sts., City and County of San Francisco (see Figures 1 and 2, pp. 14 and 15). The site comprises about 26,170 sq. ft., and occupies the entire 120-ft. frontage of Montgomery St. between Sacramento and Commercial Sts., as well as frontages of 195 ft. and 241 ft., respectively, on the latter two streets.

The site is located in the northwest portion of the San Francisco Financial District. The northern boundary of the Financial District is Washington St., two blocks north of the project site; the western boundary is Kearny St., one block west of the site, which separates the Financial District and Chinatown. The site is five blocks north of Market St. The Transamerica Pyramid is located one block to the northeast and the Bank of America headquarters is two blocks south of the site. The Bank of Canton headquarters is under construction immediately north of the site (across Commercial St.).

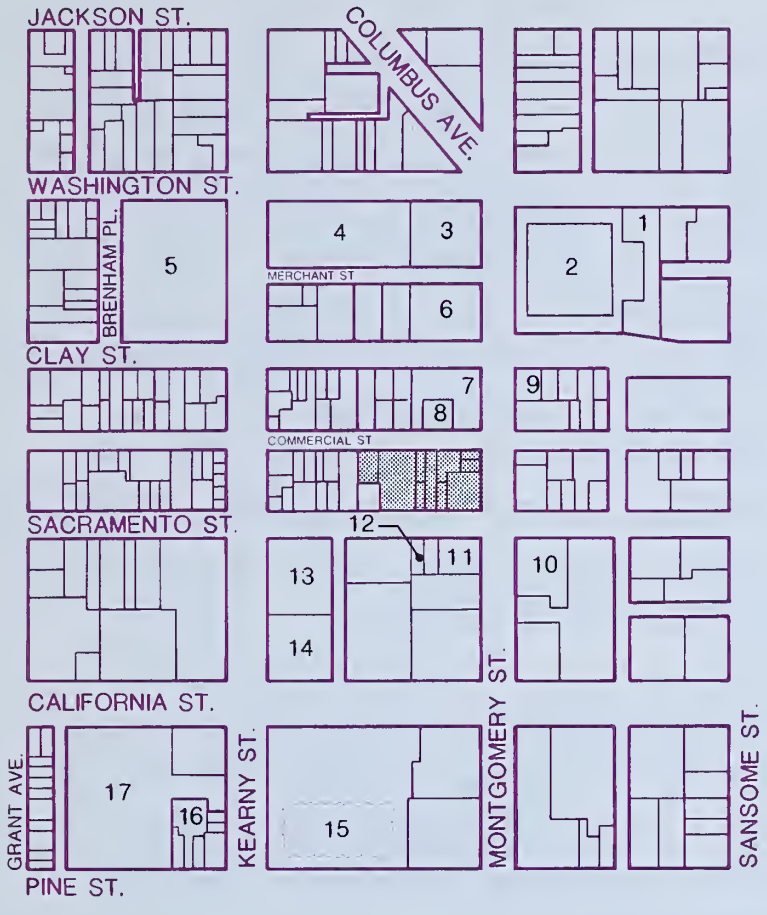
FIGURE 1

Project Location

SOURCE: Environmental Science Associates, Inc.

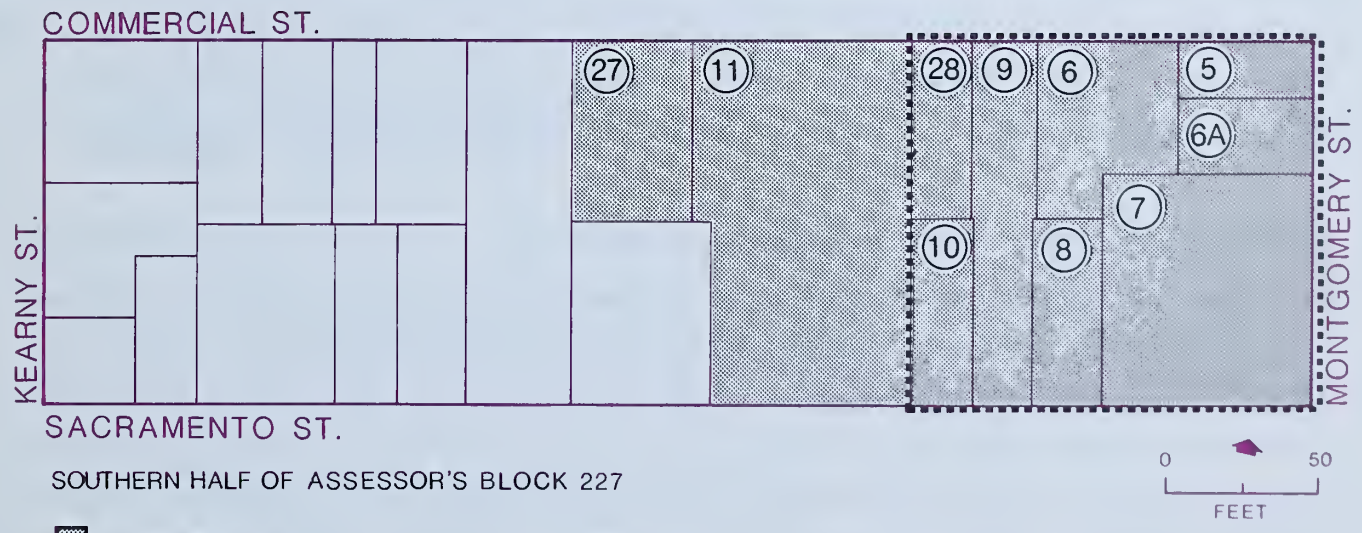
Lower-scale development is located to the west. Other development under formal review, approved, or under construction in the project vicinity is shown on Figure 2, p. 15. The ten existing buildings on the site, ranging from two to four stories, contain retail, banking, restaurant, and office uses.

The site is zoned C-3-O (Downtown Office). The basic allowable floor area ratio (FAR, the ratio of the buildings' gross floor area to the lot area) in the C-3-O District is 14:1, for a total allowable floor area for the site of 366,393 gross sq. ft. (based on a site area of 26,170.9 sq. ft.). Lots 5, 6, 6A, 7, 8, 9, 10 and 28 are in a 400-I Height and Bulk District, and Lots 11 and 27 are in a 320-I District. (See Figures 8 and 9, pp. 26 and 27.) The maximum permitted length and diagonal dimension (both applicable above a height of 150 ft.) in the 320-I and 400-I Height and Bulk Districts are 170 ft. and 200 ft., respectively.



- PROJECT SITE
- 1 Redwood Park
- 2 Transamerica Pyramid
- 3 655 Montgomery St. (UC)
- 4 Holiday Inn
- 5 Portsmouth Square
- 6 601 Montgomery St.
- 7 Bank of Canton (UC)
- 8 Old Sub-Treasury Building
- 9 552 Montgomery St.
- 10 456 Montgomery St. (UC)
- 11 455 Montgomery St.
- 12 Jack's Restaurant, 615 Sacramento St.
- 13 550 Kearny St.
- 14 580 California St. (UC)
- 15 Bank of America Headquarters
- 16 Pine/Kearny (proposed)
- 17 St. Mary's Square

(UC) Under Construction



SOUTHERN HALF OF ASSESSOR'S BLOCK 227

PROJECT SITE

Proposed New Construction

LOT 5	527 Montgomery St.	LOT 9	624 Sacramento St.
LOT 6	615-617 Commercial St.	LOT 10	628-630 Sacramento St.
LOT 6A	517-519 Montgomery St.	LOT 11	638-640 Sacramento St.
LOT 7	501-505 Montgomery St.	LOT 27	653-655 Commercial St.
LOT 8	616-618 Sacramento St.	LOT 28	627-629 Commercial St.

FIGURE 2

Project Site and Vicinity

SOURCE: Environmental Science Associates, Inc

C. PROJECT DESCRIPTION

The eight buildings closest to Montgomery St., on Lots 5, 6, 6A, 7, 8, 9, 10 and 28 (in total, about 15,600 sq. ft. of site area; see Figure 2, p. 15), would be demolished for the construction of the office tower portion of the project, which would include ground floor retail uses. The eight buildings to be demolished include: 527 Montgomery St. (at Commercial St.), a two-story Heritage "C" rated building; 615-617 Commercial St., a two-story "C" rated building; 517-519 Montgomery St., a two-story building; 501-505 Montgomery St. (at Sacramento St.), a four-story building; 616-618 Sacramento St., a three-story "C" rated building; 624 Sacramento St., a two-story "C" rated building; 628-630 Sacramento St., a two-story "C" rated building; and 627-629 Commercial St., a two-story "C" rated building. (See Figures 13-17, pp. 54, 55, 57-59, for photographs of these existing buildings.)

The remaining two buildings, 638-640 Sacramento St. and 653-655 Commercial St., both "C" rated (with about 110 ft. of frontage on Commercial St. and 65 ft. of frontage on Sacramento St.), on Lots 11 and 27 (about 10,570 sq. ft. of site area), would be retained with refurbished exteriors. These two buildings have a floor area of 29,240 gross sq. ft. The remaining developable floor area associated with these two lots (excluding the area of the retained buildings) would be used for new construction on the eastern eight lots. (See Figure 2, p. 15.) The net allowable floor area for the new building would thus be 337,153 gross sq. ft. No floor-area bonuses are being requested.

Project characteristics are summarized in Table 1, p. 17. The project would include a new office tower with ground floor retail space, and two retained buildings (with refurbished exteriors) in office and retail use. The 350-ft.-tall new building would consist of 26 stories, including ground-floor lobby and retail space (see Figure 3, p. 18), 24 floors of office space (see Figure 4, p. 19), and a mechanical floor (26th floor). In addition, it would include a 16-ft. cooling-tower level on the 27th floor, which would be exempt from the height limit, and a basement level. The maximum length and diagonal dimension (above a height of 150 ft.) would be about 120 ft. and 170 ft., respectively. The new building would include 327,250 office gross sq. ft. and 9,900 retail gross sq. ft., for a total floor area of 337,150 gross sq. ft.

TABLE 1: PROJECT CHARACTERISTICS

GROSS SQUARE FEET/a/:	Office	Retail	Total
Existing Buildings Total	53,621	16,872	70,493
Existing Buildings Demolished	-26,581	-14,672	-41,253
Existing Buildings Retained	27,040	2,200	29,240
Proposed New Building	+327,250	+9,900	+337,150
Proposed Total	354,290	12,100	366,390 /b/
Net Change	+300,669	-4,772	+295,897

PROJECT DIMENSIONS:	Permitted	Proposed
FAR /b/	14:1	14:1
Height	400 ft.	350 ft./c/
Maximum Length/d/:	170 ft.	120 ft.
Maximum Diagonal/d/:	200 ft.	170 ft.

ON-SITE EMPLOYMENT/e/:	Office	Retail	Total
Existing Buildings Total	210	50	260
Existing Buildings Demolished	-110	-40	-150
Existing Buildings Retained	110	10	110
Proposed New Building	+1,310	+30	+1,340
Proposed Total	1,420	30	1,450
Net Change	+1,200	-10	+1,190
Building Maintenance Staff			+30
Net New Employees			1,220

/a/ Does not include areas exempt from FAR calculations, such as mechanical areas and building storage, parking, and loading.
/b/ 14:1 FAR, based on site area of 26,170.9 sq. ft.
/c/ Does not include 16-ft. mechanical penthouse, which is exempt from height limit.
/d/ Applicable above a height of 150 ft.
/e/ Rounded to nearest ten employees; sums of figures do not equal totals due to this rounding.

SOURCE: Environmental Science Associates; The Empire Group; Skidmore, Owings & Merrill.

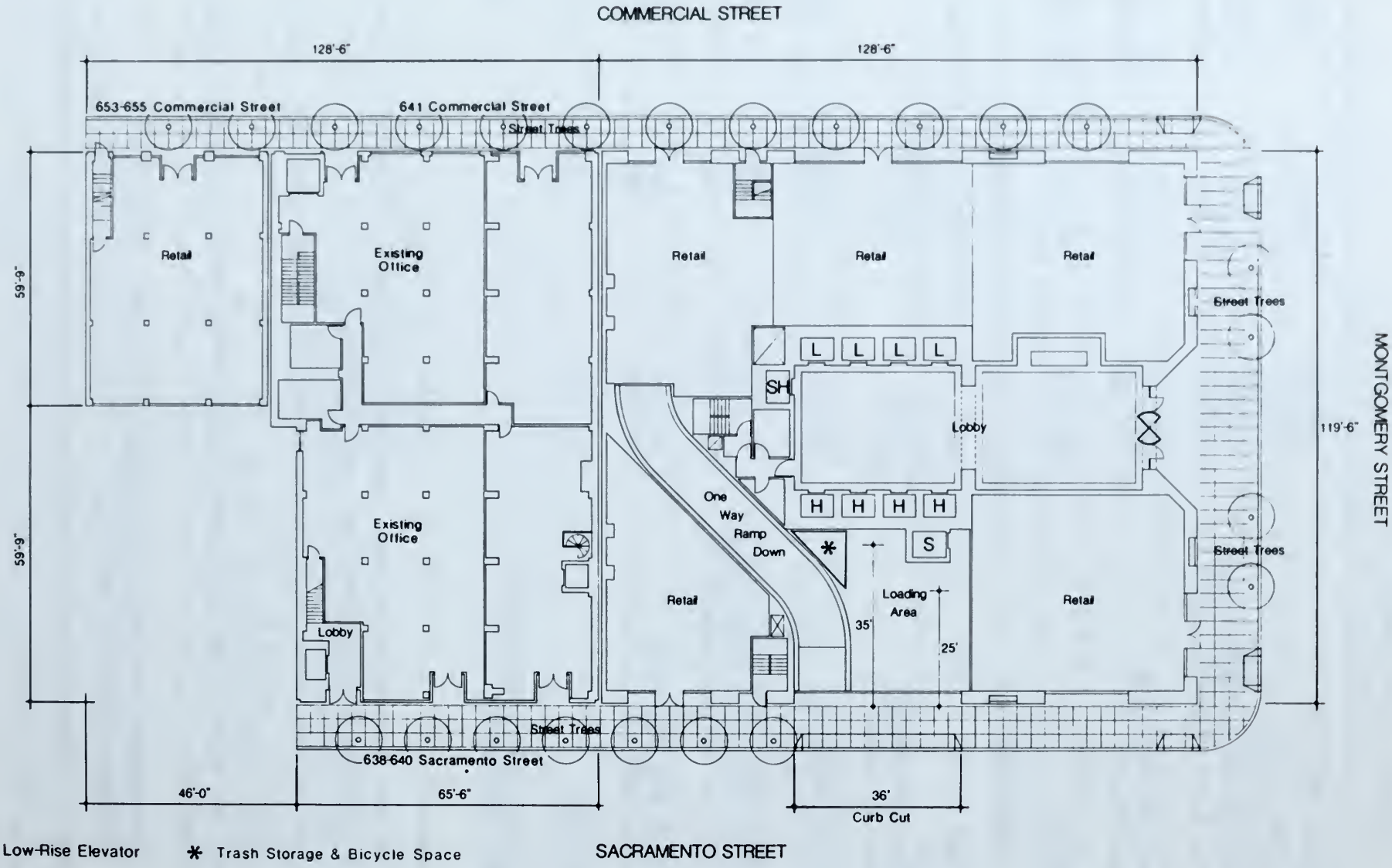
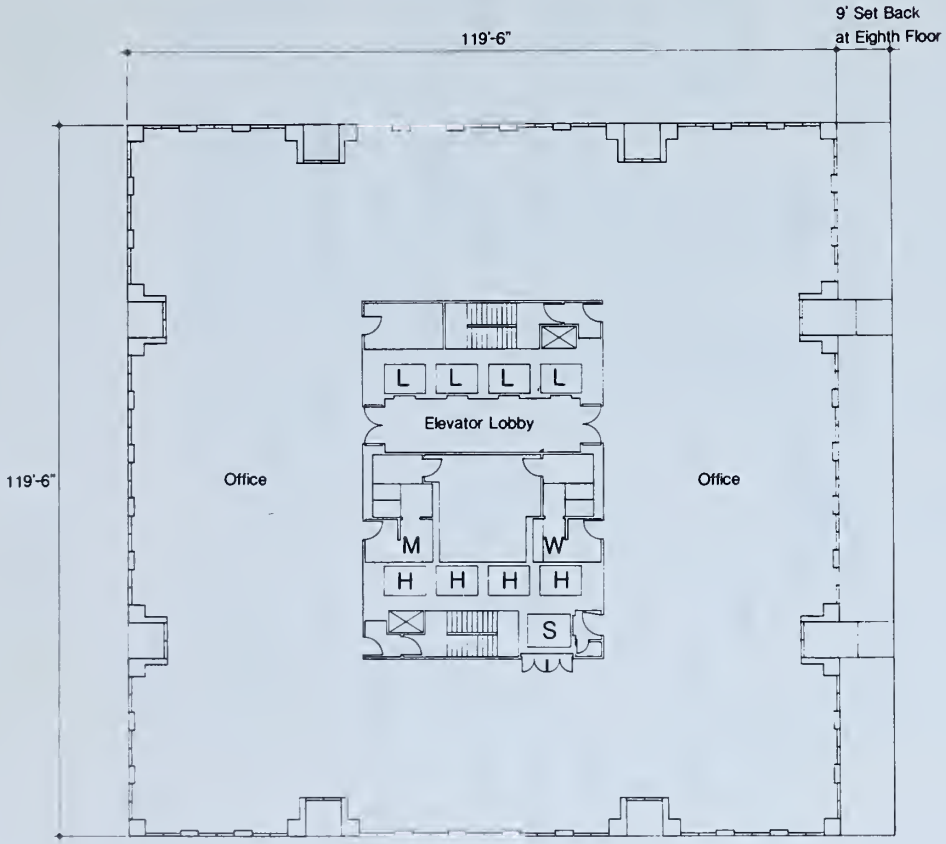
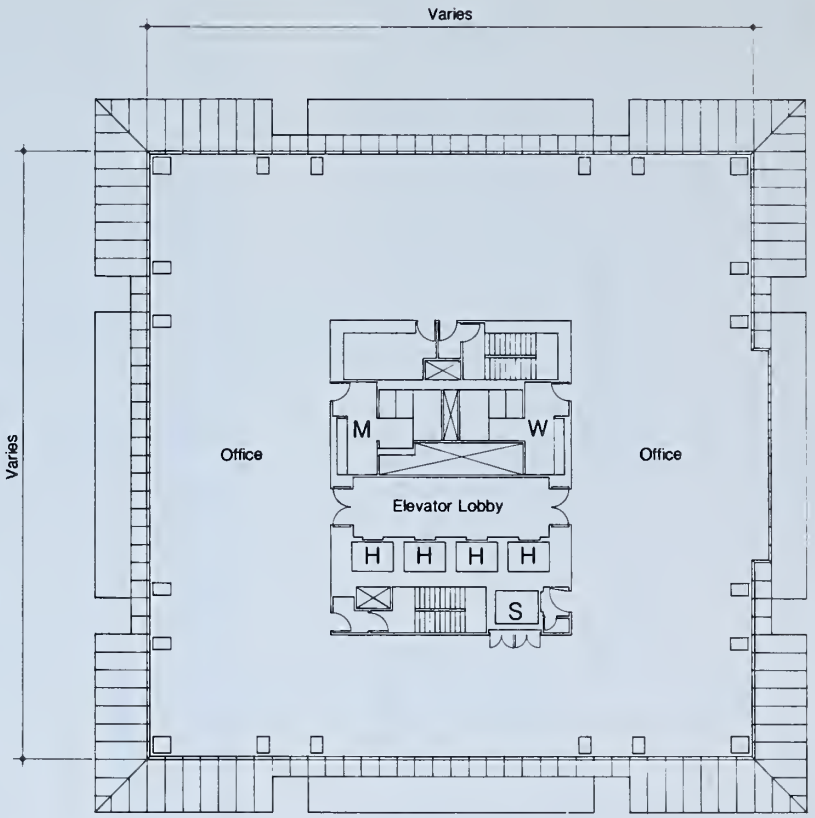


FIGURE 3
Ground Floor Plan

SOURCE:
Skidmore, Owings & Merrill



TYPICAL LOW RISE PLAN



TYPICAL HIGH RISE PLAN

(Floors 20-26 vary in dimension with tapered building profile).

L Low-Rise Elevator

H High-Rise Elevator

S Service Elevator

0 50

FEET

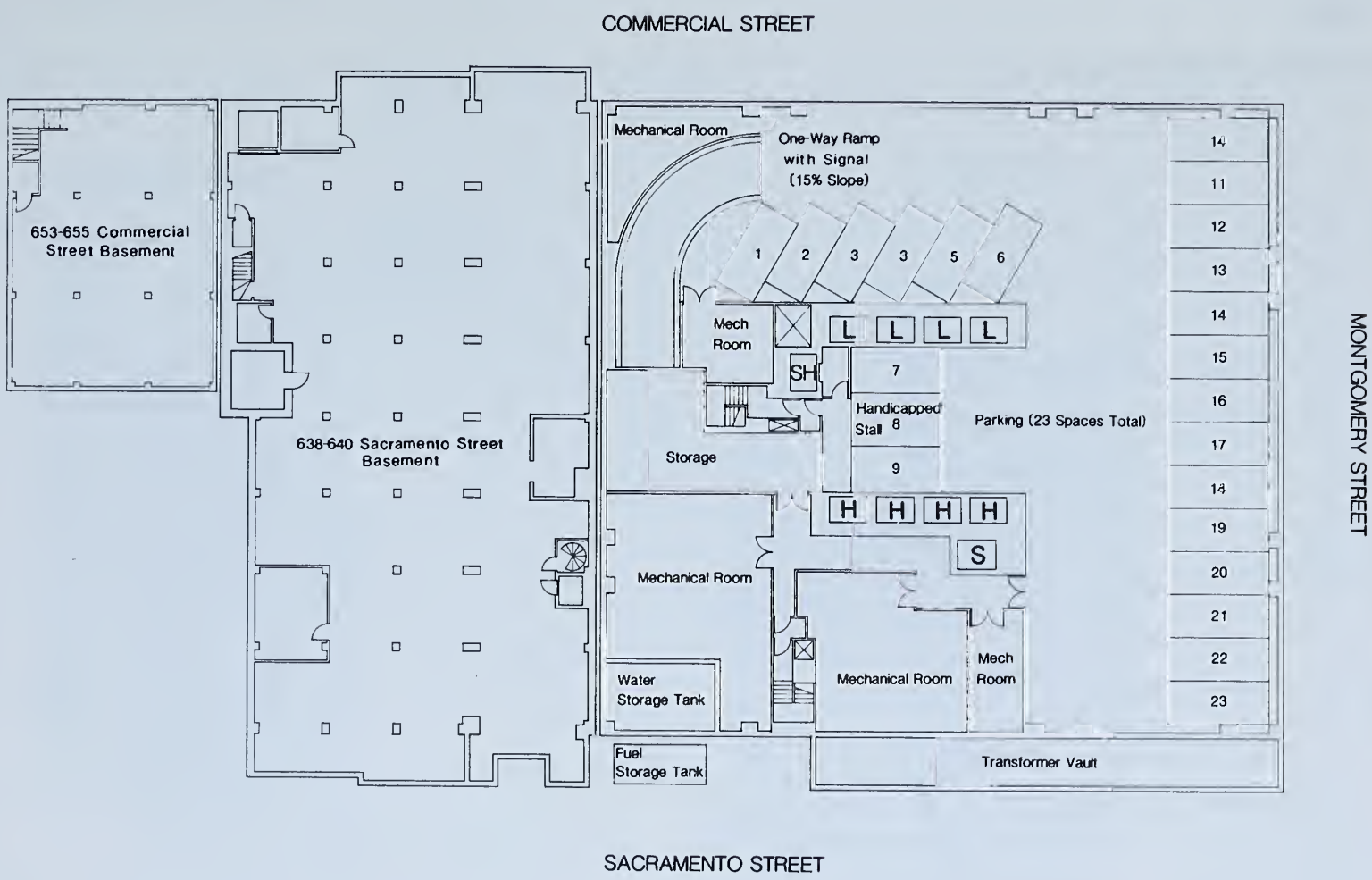
FIGURE 4
Typical Floor Plans

SOURCE
Skidmore, Owings & Merrill

The two retained buildings would include 27,040 office gross sq. ft. and 2,200 retail gross sq. ft., for a total floor area of 29,240 gross sq. ft. Thus, there would be a total of 354,290 sq. ft. of office and 12,100 sq. ft. of retail use on the site. The net changes in floor area for the entire site would be an increase of 300,669 office gross sq. ft. and a decrease of 4,772 retail gross sq. ft., or an increase of 295,897 total gross sq. ft. A portion of the ground-floor space at 638-640 Sacramento St. (641 Commercial St.), which is currently in office use, would be converted to retail use. The extent of this conversion is unknown at this time and is not reflected in the above numbers.

The ground floor of the proposed new building would include a 35-ft. and a 25-ft. loading dock, garbage storage, and the entrance/exit ramp for a basement parking garage, with access from Sacramento St. A basement level would include parking for 23 vehicles, along with mechanical and electrical equipment (see Figure 5, p. 21). It is not known at this time how project parking spaces would be allocated between long-term or short-term use. Project fuel storage and transformer vaults would extend under the Sacramento St. sidewalk.

The new building would be a three-part vertical composition consisting of a base lobby and retail level, an office mid-section and a sloped office/mechanical top section (see Figures 6 and 7, pp. 22-23). A 70-ft.-high office entry portal, and retail space, would front Montgomery St. The inset building entrance would be faced in grey granite. The ground-floor entry lobby would contain ornamentation and artwork. It would not have entrances to the retail spaces. The ground-floor retail space fronting Montgomery St. would be set back one foot from the property line to define the entry portal and enlarge the sidewalk (see Figure 3, p. 18). The project would be built to lot lines on Commercial and Sacramento Sts., with the remainder of the ground-floor retail spaces fronting these two streets. Medium-toned stone, with darker stone elements, and tinted, non-reflective windows would be the facade materials on the first three levels. An inset detail at the third level would establish the base element.



L Low-Rise Elevator

H High-Rise Elevator

S Service Elevator

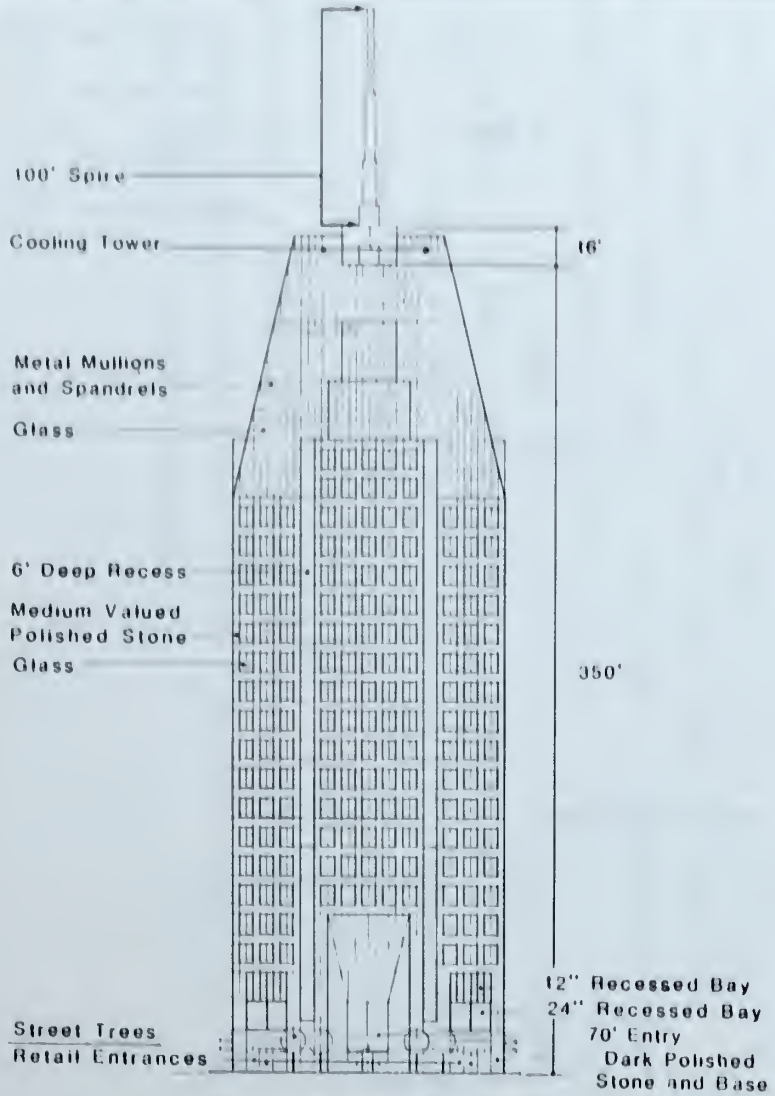
SH Shuttle Elevator

0 50

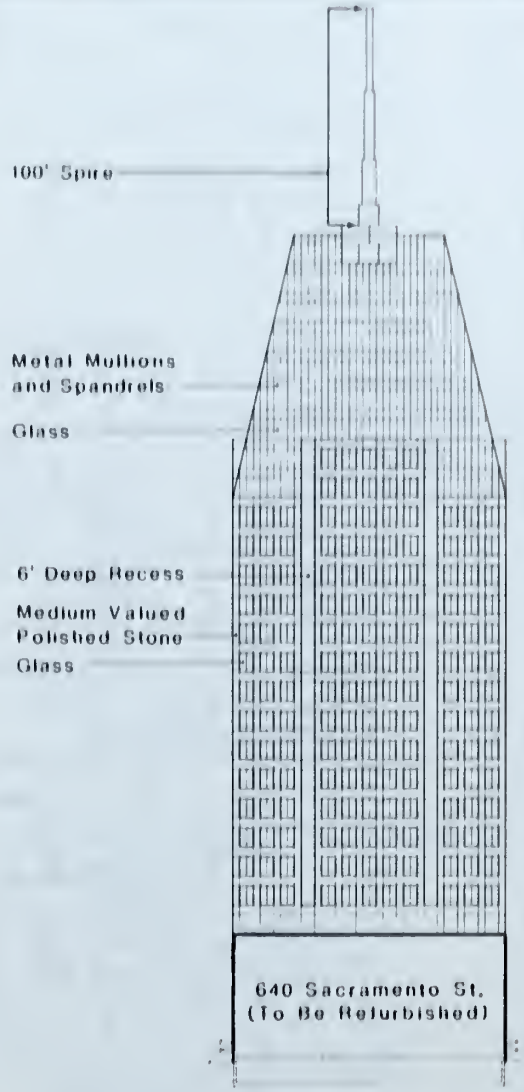
FEET

FIGURE 5
Basement Plan

SOURCE:
Skidmore, Owings & Merrill



MONTGOMERY STREET ELEVATION



WEST ELEVATION

0 100

FEET

FIGURE 6

Montgomery Street and West Elevations

SOURCE:
Skidmore, Owings & Merrill

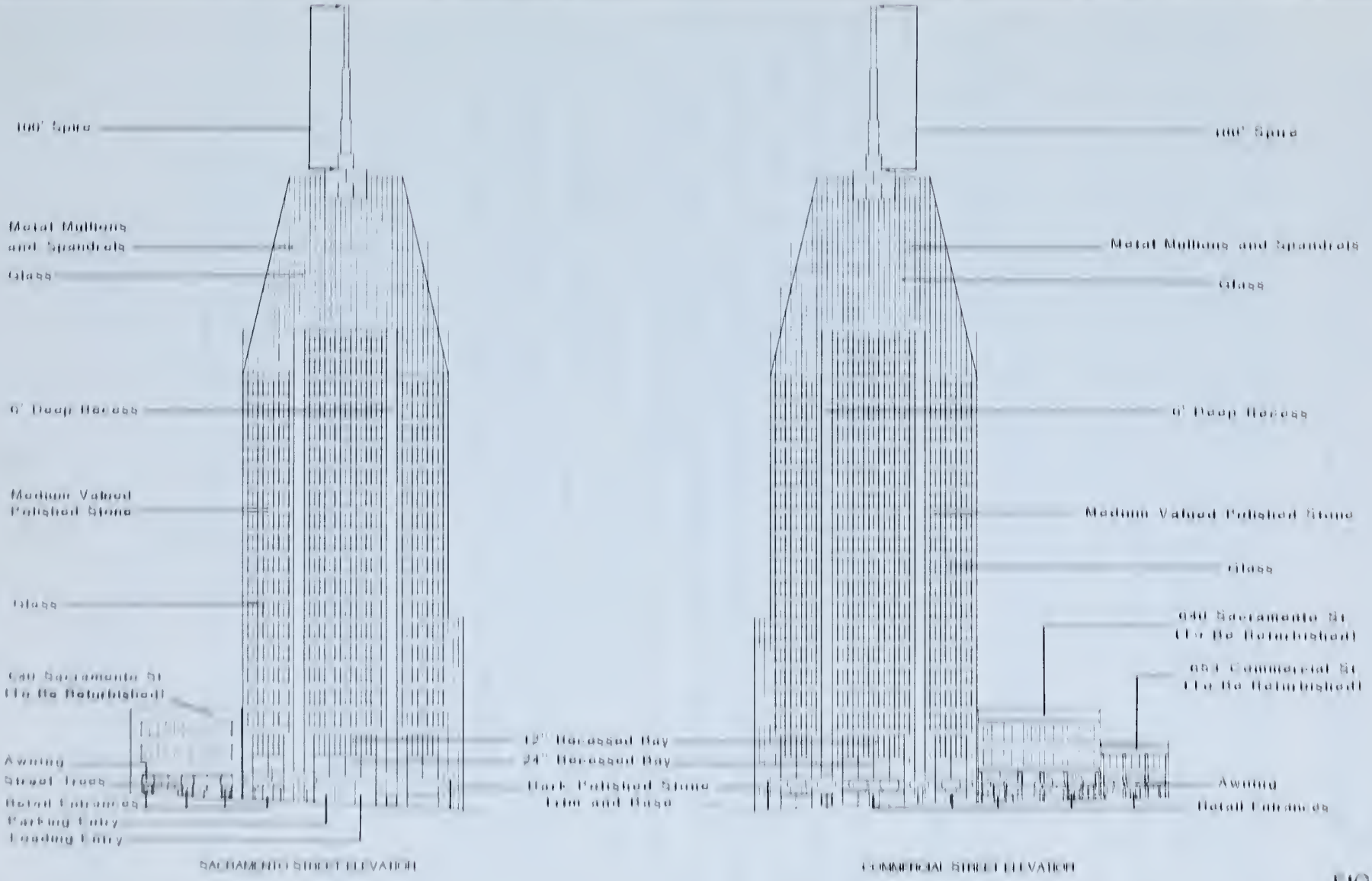


FIGURE 7

Sacramento Street and Commercial Street Elevations

SOURCE
Skidmore, Owings & Merrill

The project's office mid-section would extend to a height of 255 ft. (the 19th floor), approximately the height of the first setback on the neighboring Bank of Canton headquarters (under construction). The facade would include medium-tone stone, and tinted, non-reflective glass.

The top section of the building, above the 255 ft. level, would be set back in a tapered profile. The office portion of this top section would be sheathed in glass and metal; the mechanical level and the cooling tower, both of which would be located above the 25th floor, would be faced in metal. The building would terminate with a 100-ft. metal spire. Two vertical notches would run the height of the building on each facade, up to the 255-ft. (19th floor) level. The notches, about 30 ft. from the corners, would be about six ft. deep and six ft. wide. Above the eighth floor, there would be a nine-ft. setback on the Montgomery St. facade.

The facades of the existing buildings to be retained would be refurbished to be consistent with the context of Commercial St. and the proposed project. A portion of the ground-floor space at 638-640 Sacramento St. (641 Commercial St.), which is currently in office use, would be refurbished and converted to retail use. The extent of this conversion is unknown at this time; it would depend on further investigation of the condition of the building and of potential effects on tenant displacement. It might be possible to convert some space to retail use without displacing the existing office tenants, by reallocating the remainder of the building space. No other rehabilitation of the buildings is proposed. The retained buildings would be related to the new building by sidewalk treatment and landscaping.

D. PROJECT SCHEDULE, COST, AND APPROVAL REQUIREMENTS

The project sponsor expects project review and detailed design to be complete by early 1984. The construction schedule is planned as follows:/1/

- Demolition and Site Clearance: 6 weeks
- Excavation and Shoring: 12 weeks
- Foundation Preparation: 8 weeks

- Steel Erection:	12 weeks
- Exterior Finishing:	22 weeks
- Interior Finishing:	22 weeks
- Initial Occupancy:	82 weeks after construction start.

The refurbishing of 638 Sacramento St. and 653 Commercial St. would be completed during exterior finishing of the project tower. Project development costs would be about $72 million in 1983 dollars, including $30 million for construction./2/ Office space is expected to rent for an average of $35 per square foot per year (in 1983 dollars).

Following public review and a public hearing on this EIR, the City Planning Commission must certify the EIR as complete, accurate and objective. Under its current policy of Discretionary Review of all downtown high-rise buildings during the period of Interim Controls, the Commission would then review the building design and its environmental context, and adopt a resolution approving, approving with conditions, or disapproving the project./3/ Upon project approval, the project sponsor would obtain demolition, encroachment (for sidewalk vaults and improvements in the public right-of-way), site, building, fire, electrical, and related permits from the Central Permit Bureau of the Department of Public Works.

NOTES - Project Description

/1/ Theodore W. Smith, Dinwiddie Construction Co., letter, March 21, 1983.

/2/ Martin Brown, The Empire Group, letter, April 29, 1983.

/3/ City Planning Commission Resolution No. 8474, January 17, 1980. Board of Supervisors Ordinance 240-80, June 1, 1980, established interim limitations on use of floor area bonuses for office uses, until July 1, 1981. This ordinance was subsequently extended to May 1, 1984. Floor area bonuses may be granted for residential or hotel uses.

III. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

The City Planning Code zoning classification for the site and surrounding area is C-3-O, Downtown Office District (see Figure 8, below). Office uses and related retail and service uses, with a basic Floor Area Ratio (FAR) of 14:1, are the primary uses in this district. Wholesale, residential, and entertainment uses are also permitted. The 14:1 FAR allows buildings with a maximum total floor area 14 times the total area of the site. The total allowable floor area for the 26,170.9-sq.-ft. site would, thus, be 366,393 gross sq. ft.

The eastern portion of the site, including Lots 5, 6, 6A, 7, 8, 9, 10 and 28, is in a 400-I Height and Bulk District, while the western section, Lots 11 and 27, is in a 320-I Height and Bulk District (see Figure 9, p. 27). In both districts, the maximum permitted building length is 170 ft., and the maximum permitted diagonal measurement is 200 ft., both above a height of 150 ft.

FIGURE 8
Planning Code Use Districts

SOURCE: San Francisco City Planning Code

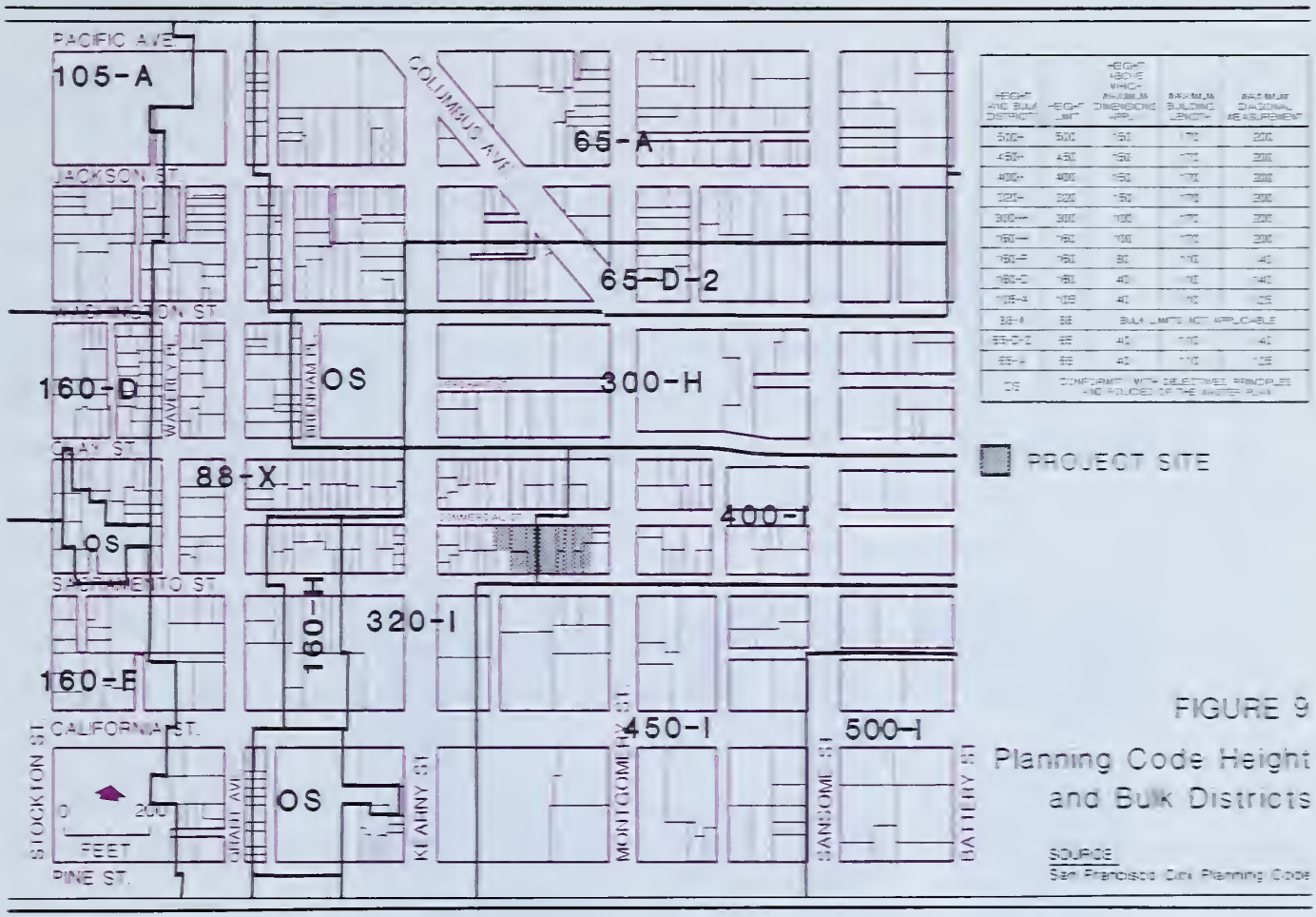


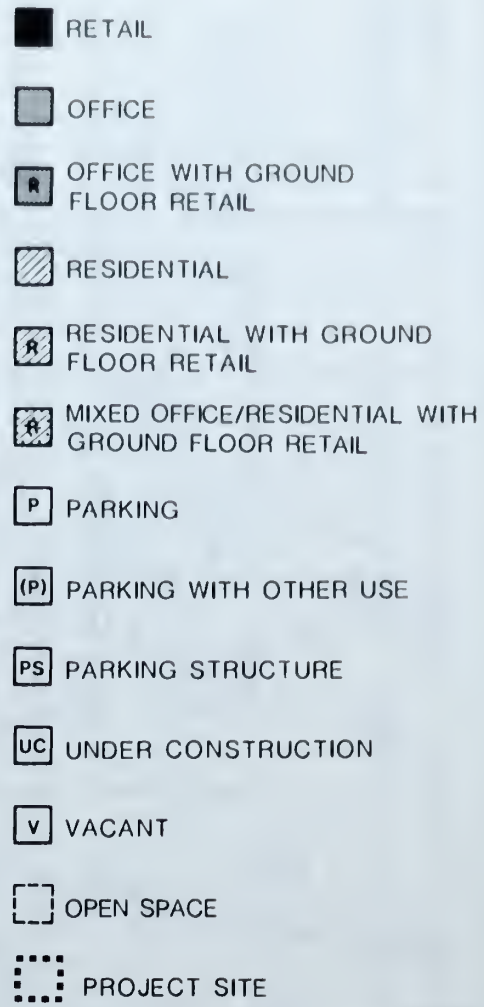
FIGURE 9
Planning Code Height and Bulk Districts

SOURCE
San Francisco City Planning Code

South of Sacramento St., directly across the street from the site, the height limit is 450 ft. Two blocks north of the site is a 65-D-2 District. In this district (part of the C-2, Community Business District), the height limit is 65 ft., with height exceptions to be approved by the City Planning Commission (by conditional use authorization), not to exceed 200 ft. The district is intended to maintain a visual transition from the high-rise buildings of the Financial District to the lower three- and four-story buildings in the Jackson Square Historic District to the northeast, and on Telegraph Hill and in North Beach to the north. Just south of the 65-D-2 District, the height limit is 300 ft. West of Kearny St., height districts in the project area include 160-ft. and 88-ft. limits. Also located nearby are St. Mary's and Portsmouth Squares, with Open Space Height and Bulk Districts./1/ Land use in the project area is shown in Figure 10, p. 28.

NOTE - Land Use and Zoning

/1/ City and County of San Francisco, Chapter 11 of the San Francisco Municipal Code, City Planning Code, Sec. 263.1.



* Includes restored Old Sub-Treasury Building with proposed Pacific Heritage Museum

FIGURE 10

Land Use in Project Vicinity

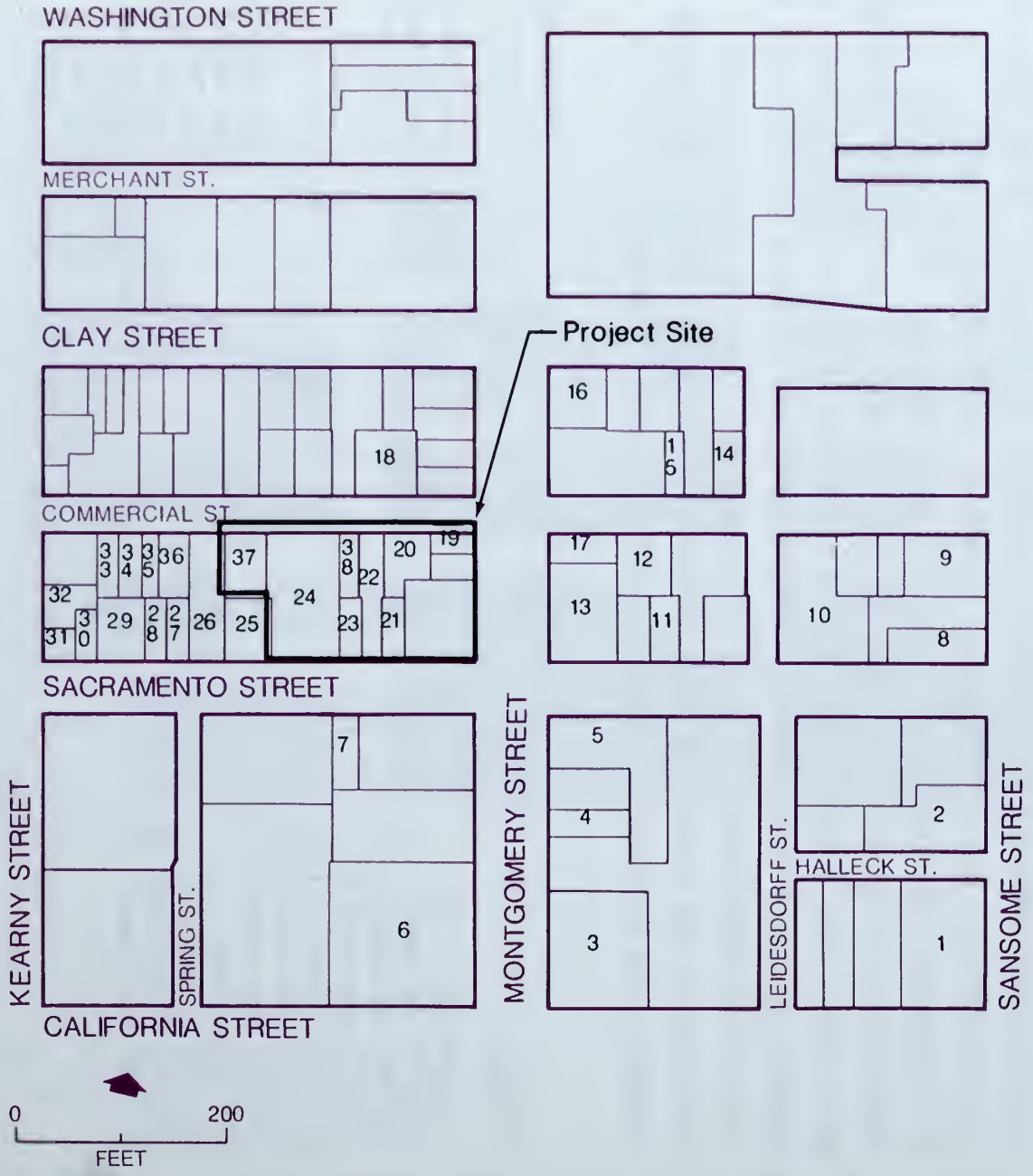
SOURCE:
Environmental Science Associates, Inc.

B. HISTORIC, ARCHITECTURAL AND CULTURAL RESOURCES

PROJECT SITE

The project site contains ten, two- to four-story structures built between 1906 and 1950 as listed below, in order of date of construction./1/ The architectural characteristics of these individual buildings are discussed in Section IV. Environmental Impact, pp. 53-60. None of the buildings is on the City's List of Architecturally and/or Historically Significant Buildings in the Downtown./2/ Eight of the buildings are rated "C" by the Foundation for San Francisco's Architectural Heritage (Heritage). (Buildings were rated from a high "A" to a low "D".) Buildings rated "C" are recognized by Heritage to be of contextual importance; these buildings "are distinguished by their scale, materials, compositional treatment, cornice and other features."/3/ Such buildings establish the setting for more important buildings and add visual diversity and architectural character to the downtown area.
527 Montgomery St. is rated "1" and 627-629 Commercial St. is rated "0" in the Department of City Planning architectural survey; the other site buildings are not rated. (For a description of the surveys, list and rating systems, see Appendix B, pp. A-25 to A-26.) Architectural and historic resources on the site and in the project vicinity are mapped on Figure 11, p. 30. The buildings on the site contribute to the architectural context for nearby City Landmarks and National Register buildings, discussed below.

Building	Construction Date	Heritage Rating	DCP Survey Rating
527 Montgomery St.	1906	C	Not Rated
616-618 Sacramento St.	1907	C	Not Rated
638-640 Sacramento St. (641 Commercial St.)	1907	C	Not Rated
615-617 Commercial St.	1907	C	1
627-629 Commercial St.	1910	C	0
628-630 Sacramento St.	1910	C	Not Rated
624 Sacramento St.	1920	C	Not Rated
653-655 Commercial St.	1923	C	Not Rated
501-505 Montgomery St.	1950	Not Rated	Not Rated
517-519 Montgomery St.	1950	Not Rated	Not Rated



BUILDINGS ON CITY LIST [1] AND CITY LANDMARKS	HERITAGE SURVEY	S.F. DCP INVENTORY
1 400 California St. +	A	5
2 343 Sansome St.	B	1
3 400 Montgomery St. +	A	4
4 440 Montgomery St. +	A	4
5 460 Montgomery St. +	A	3
6 405 Montgomery St.	A	NR
7 615 Sacramento St. +	B	1
8 401-405 Sansome St.	C	3
9 415-429 Sansome St.	B	1
10 222 Leidesdorff St.	B	3
11 568 Sacramento St.	B	NR
12 569 Commercial St. +	A	4
13 500 Montgomery St.	B	5
14 554 Commercial St.	A	0
15 564-566 Commercial St.	B	1
16 552 Montgomery St. *	A	4
17 520 Montgomery St.	B	3
18 608 Commercial St. + *	A	3

OTHER RATED BUILDINGS ON SOUTHERN HALF OF PROJECT BLOCK [2]	HERITAGE SURVEY	S.F. DCP INVENTORY
19 527 Montgomery St.	C	NR
20 615-617 Commercial St.	C	1
21 616-618 Sacramento St.	C	NR
22 624 Sacramento St.	C	NR
23 628-630 Sacramento St.	C	NR
24 638-640 Sacramento St.	C	NR
25 648-656 Sacramento St.	C	NR
26 658-662 Sacramento St.	C	NR
27 666-668 Sacramento St.	C	NR
28 672-680 Sacramento St.	B	NR
29 686 Sacramento St.	C	NR
30 688-690 Sacramento St.	C	NR
31 600-602 Kearny St.	B	2
32 610-612 Kearny St.	C	1
33 685-687 Commercial St.	B	2
34 681-683 Commercial St.	B	2
35 673-675 Commercial St.	C	0
36 667-671 Commercial St.	C	0
37 653-655 Commercial St.	C	NR
38 627-629 Commercial St.	C	0

NOTES:
1 List of Architecturally and/or Historically Significant Buildings in the Downtown, adopted by the City Planning Commission, May 29, 1980. Includes buildings rated "A" or "B" in Splendid Survivors, or "3", "4", or "5" in the OCP Inventory.
2 Buildings on southern half of project block rated "A", "B", or "C" in the Expanded Heritage Survey, or rated "C" in Splendid Survivors and "2" or lower in the OCP Inventory.
+ City Landmark
* National Register of Historic Places
NR Not Rated

FIGURE 11

Architectural and

Historic Resources in Site Vicinity

SOURCE:
Environmental Science Associates, Inc.

SITE VICINITY

Buildings in the vicinity of the project site include designated City Landmarks, buildings listed on the National Register of Historic Places, and buildings on the City's List of Architecturally and/or Historically Significant Buildings in the Downtown (see Figure 11, p. 30). They are discussed in order of significance and proximity.

The 18-story Bank of Canton of California headquarters building is under construction at the intersection of Montgomery and Commercial Sts., directly north of the project site. That project will restore and incorporate the Old Sub-Treasury Building at 608 Commercial St., a City Landmark, listed in the National Register of Historic Places, and rated "A". The Kohl Building at 400 Montgomery St., a City Landmark and "A" rated, is located one block south of the project site on Montgomery St. It is the only high-rise building in the Financial District to have (partially) survived the 1906 earthquake and fire. The 24-story, 456 Montgomery St. building, under construction at the southeast corner of Sacramento and Montgomery Sts., will incorporate the facades of two City Landmarks: the Sutro and Co. Building (460 Montgomery St.) and the Borel and Co. Bank Building (440 Montgomery St.), both of which are "A" rated. PG&E Station J at 569 Commercial St., one block east of the site, is a City Landmark and "A" rated. The Jack's Restaurant building at 615 Sacramento St., directly south of the project site, is a City Landmark and "B" rated. The 552 Montgomery St. building, one-half block north of the project site, is listed on the National Register of Historic Places and rated "A".

Other buildings in the area on the City's List of Architecturally and/or Historically Significant Buildings in the Downtown include the "A" rated Financial Center Building, located one block south of the project site at 405 Montgomery St. Directly across from the project site are the "B" rated Asian American Bank Building at 500 Montgomery St., and the "B" rated 520 Montgomery St. building. Both buildings are clad in glazed terra cotta and have modified temple fronts without pediments./4/ The Corinthian pilasters/5/ of the 520 Montgomery St. building continue the Ionic columns of the Asian American Bank Building and the Tuscan order of the Sutro Co. Building (460 Montgomery St.).

Four "B" and eight "C" rated one- to four-story buildings, none included on the City's list of significant structures, are located on Sacramento, Kearny, and Commercial Sts. on the western portion of the project block. All but three of the buildings on the southern half of Block 227, which contains the site, are rated by the two Heritage surveys. Eight are rated by the DCP survey. (See Appendix B, pp. A-25 to A-26.)

NOTES - Historic, Architectural and Cultural Resources

/1/ Raybern and Company, Inc., 1982, The San Francisco Realty Index, 1982-83 Edition.

/2/ San Francisco City Planning Commission Resolution No. 8600, May 29, 1980.

/3/ Foundation for San Francisco's Architectural Heritage, 1979, Splendid Survivors, California Living Books, San Francisco, p. 13.

/4/ A pediment is the triangular face of a roof gable.

/5/ A pilaster is a column-like decoration of shallow depth.

C. URBAN DESIGN AND VISUAL QUALITY

The project site is near the boundary between the high-rise buildings of the Financial District to the east and south, and the low-rise structures of Chinatown to the west. The project site is also between the two tallest buildings in San Francisco, the 52-story Bank of America Headquarters two blocks south of the project site at Kearny and California Sts., and the 48-story Transamerica Pyramid, one block north of the site on Montgomery St. between Clay and Washington Sts.

Most buildings in the project vicinity are built to lot lines, forming continuous street frontages which define the gridiron street pattern of the Financial District. The major open spaces in the area are the Bank of America Plaza at California and Kearny Sts. (about two blocks south of the project site), the Transamerica Pyramid's Redwood Park at Clay and Leidesdorff Sts. (about two blocks northeast of the site), Portsmouth Square on Kearny St. between Clay and Washington Sts. (about two blocks northwest of the site), and St. Mary's Square between Pine and California Sts. west of Kearny St. (about three blocks southwest of the site).

Commercial St., between Montgomery and Kearny Sts. in the project block, is characterized by small-scale, one- to four-story commercial structures. The 22-ft.-wide street, narrower than Sacramento or Montgomery Sts., provides a small-scale character in this portion of the Financial District, west of the 18-story Bank of Canton headquarters, under construction. (See Figure 12, p. 34.)

New buildings on Montgomery St. in the project block and one block south and north (Bank of Canton, 456 Montgomery St., and 655 Montgomery St.) will extend high-rise development along Montgomery St. High-rise buildings on Montgomery St. define the main center of the Financial District, south of Sacramento St., with smaller-scale buildings on the east side of Montgomery St. between Sacramento and Clay Sts. North of Clay St., high-rise buildings continue to Washington St.

Looking to the western end of Commercial St. from the site, the view terminates uphill at Grant Ave. in Chinatown. Looking east on Commercial St., the view extends to the Ferry Building (framed between the Embarcadero Center towers); this is the only San Francisco street other than Market St. where this occurs. In views north from the corner of Sacramento and Montgomery Sts. up Montgomery St., the Bank of Canton headquarters will partially block the existing view of the 19-story 601 Montgomery St. building; there will still be a view of Telegraph Hill to the north. In views west of the site, from the northwest corner of Commercial and Montgomery Sts., the small-scale structures of Chinatown on the eastern slope of Nob Hill form a background for the site. Looking south and east toward the site from Portsmouth Square or Nob Hill, views include high-rise buildings of the Financial District, with smaller-scale buildings in the foreground.

No long-range views of San Francisco Bay or other parts of the City other than the Financial District are available from the existing buildings on the site. The project site is not visible from long-range view points to the west or south (i.e., Twin Peaks and Potrero Hill), because of intervening high-rise structures. The existing on-site structures are generally not visible from locations beyond the buildings and streets in the immediate project vicinity.

1. 527 Montgomery St.
2. 615-617 Commercial St.
3. 624 Sacramento St. (Entrance on Sacramento St.)
4. 627-629 Commercial St.
5. 638- 640 Sacramento St.
6. 653-655 Commercial St.

FIGURE 12

View East,
From Mid-block Commercial Street

SOURCE:
Environmental Science Associates, Inc.

D. SHADOW AND WIND

SHADOW

Existing structures on the site cast shadows on streets and sidewalks in the project vicinity. Portions of Commercial and Montgomery Sts. within one block of the project site are shaded at different times of day in all seasons of the year. Existing and project shadow patterns for various times of the day and year are discussed in detail in Section IV. Environmental Impact, pp. 71-87.

WIND

Wind conditions in San Francisco partially determine pedestrian comfort on sidewalks and in other public areas. In downtown areas, flat-walled high-rise buildings can funnel wind into narrower areas, increase air speed and turbulence, and divert winds downward to street level.

U.S. Weather Bureau and Bay Area Air Quality Management District data show that westerly (i.e., from the west), southwesterly, and northwesterly winds are the most frequent and strongest winds during all seasons in San Francisco./1/ On an aggregate basis, west winds blow approximately 52% of the time. West winds are also the strongest, averaging about seven miles per hour (mph), exceeding 12 mph 6% of the time.

Southwesterly winds are typically the second most frequent (about 14% of the time) and second strongest winds, averaging seven mph and exceeding 12 mph about 2% of the time. Northwesterly winds have had the second highest average speed during some years, though they generally occur 6-8% of the time, averaging five mph, and rarely exceeding 12 mph.

Average wind speeds are highest during summer and lowest during winter months. However, the strongest peak winds occur during the winter, when average speeds of 27 mph or more for one hour have been recorded. The highest average wind speeds are in the mid-afternoon, and the lowest are in the early morning. Peak wind speeds are distributed evenly throughout the day.

NOTE - Shadow and Wind

/1/ The U.S. Weather Bureau data were collected from 1891 to 1930 at 465 California St., near Montgomery St., about one block south of the site. The Bay Area Air Quality Management District data were collected in the mid-1970's at 939 Ellis St., near Van Ness Ave., about 1.8 miles southwest of the site. (The BAAQMD station is now at 900 23rd St.)

E. TRANSPORTATION, CIRCULATION AND PARKING

The site is served by local streets and by portions of the regional freeway system (see Figure 1, p. 14). Access to the freeways connecting with the East Bay, San Francisco International Airport and the Peninsula is provided by pairs of ramps about 1,500 ft. to the northeast (Washington and Clay Sts. at Davis St.), and about 1,400 ft. to the northeast (Broadway at Sansome and Battery Sts.).

The site is within the Downtown Core automobile control area designated in the Transportation Plan of the Transportation Element of the San Francisco Master Plan./1/ The Plan calls for reducing the impact of private commuter vehicles and excess automobile traffic in the Downtown Core, by not providing new parking within the core.

In the vicinity of the project site, Columbus, Montgomery, Kearny, Sansome and Clay Sts. are designated in the Downtown Transportation Plan as transit preferential streets on which priority is given to transit vehicles over autos during commute and business hours on weekdays./1/ Washington, Clay, Columbus, Montgomery, and Kearny Sts. are designated as primary vehicular streets, which the Master Plan defines as "major routes for automobile and truck movements into and out of the downtown area."

Montgomery St. is one-way southbound and carries three lanes of traffic between Clay and Sacramento Sts. Kearny St. is one-way northbound, with four traffic lanes between Clay and Sacramento Sts. Sacramento St. is one-way westbound and carries three lanes of traffic between Montgomery and Kearny Sts. Commercial St. is a one-lane, one-way westbound street. The intersection of Montgomery and Sacramento Sts. is controlled by a fixed-time traffic signal.

The site is served by San Francisco Municipal Railway (Muni) electric trolley and motor coach lines, providing radial service to and from the downtown area. Muni Metro light rail vehicle lines are accessible via the Embarcadero Station (2,200 ft. southeast of the project site) and the Montgomery Station (2,400 ft. south of the project site) of the Market St. subway. Muni and BART routes in the project vicinity are shown in Figure 35, p. 95. Appendix D, Table D-1, p. A-40, shows the existing p.m. peak-hour conditions on the Muni and other transit systems.

Regional transit service to the site is provided to and from the East Bay by the Bay Area Rapid Transit District (BART) at the Embarcadero and Montgomery Stations on Market St., and by AC Transit motor coaches at the Transbay Transit Terminal, located on Mission St. at First St., 3,500 ft. southeast of the project site.

Service to the Peninsula is provided jointly by CalTrans and the Southern Pacific Transportation Company (SP) from a train terminal at Fourth and Townsend Sts.; by the San Mateo County Transit District (SamTrans) from bus routes and stops along various streets in the area, primarily on Mission St. west of First St. (SamTrans Route 7A runs south on Montgomery St., as part of a peak-period route to San Mateo and Foster City, with stops on Montgomery St. at Clay and at California Sts.); and by BART, which provides transfers to SamTrans routes at the Daly City BART Station. Independently owned and operated jitneys provide service along the entire length of Mission St. (from The Embarcadero to Daly City) during a.m. and p.m. peak hours.

The Golden Gate Bridge, Highway and Transportation District (Golden Gate Transit) provides a.m. and p.m. peak-period bus service to Marin and Sonoma Counties from boarding stops along Howard St., at the Transbay Transit Terminal, and along Sansome St. Discharge stops are located along Folsom St., at the Transbay Transit Terminal, and along Battery St. The closest stops to the project site are at Sacramento and Sansome Sts. (boarding) and Sacramento and Battery Sts. (discharge), one and two blocks east of the site, respectively. Golden Gate Transit provides ferry service to terminals in Larkspur and Sausalito from the Ferry Building, about 2,500 ft. east of the site.

Golden Gate Transit also operates a van pool program to North Bay areas not served by existing motor coach routes. The RIDES car pool program operates as a nonprofit, publicly funded corporation, and provides consulting and matching services to help establish Bay Area carpools and vanpools. Currently, there are about 610 carpools on the Golden Gate Bridge during the a.m. peak hour, carrying about 2,180 people daily (average occupancy of 3.6 persons per vehicle). The Bay Bridge has about 1,890 carpools during the a.m. peak hour, carrying about 7,560 people daily (an average occupancy of 3.9 persons per vehicle)./2,3/

Pedestrian activity around the site during the peak periods of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. is directed primarily to and from transit and parking facilities. Peak afternoon pedestrian flows are generally more intense than those of the morning period. Noon-hour flows are generally equivalent to or more intense than the afternoon flows, and are directed primarily to restaurants and retail stores within the downtown area.

Sidewalk widths on Montgomery St. in the project block are restricted by restaurant signs, trash cans, and a fire hydrant, resulting in an effective (clear) width of 7 ft., about 60% of the full building-to-curb width of 12 ft. Sidewalk widths on Sacramento St. are restricted by newsstands and a traffic signal pole, for an effective width of 6 ft., about 55% of the unobstructed full width of 11 ft.

The Sacramento St. sidewalk along the project frontage currently operates during the noon hour at the lower end of the impeded range. Appendix D, Table D-2, p. A-41 is a summary of pedestrian flow regimens (open, impeded, etc.). During the afternoon peak period, between 4:00 and 6:00 p.m., the Sacramento St. sidewalk operates in unimpeded conditions.

The Montgomery St. sidewalk along the project frontage currently operates near the lower end of impeded conditions during the noon hour and near the upper end of unimpeded conditions during the p.m. peak. Operating conditions on the Montgomery St. sidewalks near Market St. (about five blocks south of the project) are in the constrained to crowded ranges during peak periods.

Crosswalk flows across Montgomery St. at Sacramento St. currently operate in impeded conditions during the noon hour and in unimpeded conditions during the p.m. peak hour. Existing pedestrian flows across Sacramento St. at Montgomery St. operate in impeded conditions during both the noon hour and the p.m. peak-hour.

NOTES - Transportation, Circulation and Parking

/1/ San Francisco Department of City Planning, January 1983, Transportation, an Element of the Master Plan.

/2/ Kay McGuill, Golden Gate Bridge, Highway and Transportation District, telephone conversation, May 13, 1982.

/3/ Elysia Chan, Public Information Officer, Rides for Bay Area Commuters, Inc., telephone conversation, May 13, 1982.

F. AIR QUALITY

San Francisco's air quality, in general, is the least degraded of all the developed portions of the Bay Area. Because of the prevailing westerly and southwesterly winds, San Francisco is more a generator of its own air quality problems (especially carbon monoxide (CO) and total suspended particulates (TSP)) and a contributor to those problems in other parts of the Bay Area (especially ozone (O_3)), than a recipient of pollutants from elsewhere.

The Bay Area Air Quality Management District (BAAQMD) operates an air quality monitoring station about 2.5 miles south of the site at 900 23rd St. A three-year summary of the data collected, and the corresponding ambient air quality standards, are shown in Appendix F, p. A-55. These data show occasional excesses of the CO and TSP standards. In 1982, the eight-hour standard for CO was exceeded once and the 24-hour TSP standard exceeded three times. The one-hour CO standard was never exceeded. (A more-stringent one-hour CO standard went into effect January 15, 1983.) The only air pollutant to exceed standards in 1980 and 1981 was TSP; the 24-hour standard was exceeded six times in 1980 and once in 1981.

Highest annual pollutant concentrations in San Francisco, while exhibiting fluctuations due to variations in meteorology, have shown an overall improvement during the 1971-1982 period. No similar trend in the annual number of violations of standards is evident, although such occurrences are infrequent (six a year or fewer).

Emissions from motor vehicles are the largest source of CO, hydrocarbons (HC), TSP, and nitrogen oxides (NOx) in San Francisco, while power plant fuel combustion is the largest source of sulfur oxides (SOx)./1/

The nine-county San Francisco Bay air basin is designated by the California Air Resources Board (ARB) as a nonattainment area for O_3, CO and TSP. (Nonattainment means the federal ambient air quality standards for these pollutants have been violated within the past two to three years.) As required by the federal Clean Air Act Amendments of 1977, a regional Air Quality Plan has been adopted that establishes control strategies (stationary and mobile source emission controls and transportation improvements) to attain Federal and State standards for these pollutants by 1987./2/ The BAAQMD, Metropolitan Transportation Commission (MTC), and ARB have primary responsibility for implementation of these strategies.

NOTES - Air Quality

/1/ California Air Resources Board (ARB), 1979, Emission Inventory 1976.

/2/ Association of Bay Area Governments (ABAG), BAAQMD, MTC, 1982 Bay Area Air Quality Plan, December 1982.

G. EMPLOYMENT, HOUSING AND FISCAL FACTORS

ON-SITE EMPLOYMENT

Approximately 260 employees currently work at the project site./1/ Employees include office, banking, restaurant, retail and maintenance workers. Table 2, p. 41, identifies the gross floor area of each tenant on-site. About 98% of the total building office area on-site is currently occupied.

TABLE 2: EXISTING USES AT PROJECT SITE /a/

Lot; Address	Tenant	Use	Gross Floor Area (Square Feet) Office/b/	Retail	Subtotal/b/
5; 527 Montgomery St.					
	Mr. Submarine	Restaurant		788	788
	L. Prentice	Office	788		788
	Subtotal		788	788	1,575
6; 615-617 Commercial St.					
	Everybody's	Beauty Salon		924	924
	Xerox	Office/Warehouse	1,290		1,290
	Bank of America	Office	2,059		2,059
	Subtotal		3,349	924	4,273
6A; 517-519 Montgomery St.					
	Fink's	Restaurant/Bar		1,071	1,071
	Allied Artists	Office	1,071		1,071
	Subtotal		1,071	1,071	2,142
7; 501-505 Montgomery St.					
	Fotolithics	Photo Lab	400		400
	Gigi's	Restaurant		1,775	1,775
	For Eyes	Opticians		1,300	1,300
	Paper and Ink	Photocopiers		245	245
	Coast Fed. Savings	Savings and Loan	1,840		1,840
	Bank of America	Office	11,660		11,660
		Vacant	1,263		1,263
	Dr. Lawrence Lipkind	Dental office	1,235		1,235
	Subtotal		16,398	3,320	19,718
8; 616-618 Sacramento St.					
		Vacant		1,285	1,285
		Vacant	643		643
	D'Arcy MacManus	Office	643		643
	Xin Feng She	Office	1,285		1,285
	Subtotal		2,570	1,285	3,855
9; 624 Sacramento St.					
		Vacant		4,887	4,887
10; 628-630 Sacramento St.					
	Tachibana	Restaurant		1,208	1,208
	State Farm Insurance	Office	1,208		1,208
	Subtotal		1,208	1,208	2,415

(Continued)

TABLE 2: EXISTING USES AT PROJECT SITE /a/ (Continued)

Lot; Address	Tenant	Use	Gross Floor Area (Square Feet) Office	Retail	Subtotal/b/
11; 638-640 Sacramento St.					
	Getz Bros.	Office	24,305		24,305
27; 653-655 Commercial St.					
	Mercedes'	Restaurant		2,200	2,200
	Pat Franklyn	Office	2,735		2,735
	Subtotal		2,735	2,200	4,935
28; 627-629 Commercial St.					
	Art Blum	Office	1,198		1,198
	Applause	Hair Salon		1,190	1,190
	Subtotal		1,198	1,190	2,388
TOTALS/b/			53,621	16,872	70,493

/a/ Existing on-site employees are estimated to number 260 (rounded to the nearest ten), based on one office employee per 250 gross sq. ft. of office space, one retail/restaurant employee per 350 gross sq. ft. of retail space, and one building employee per 12,000 gross sq. ft. of total floor area.
/b/ Sums of figures do not equal totals due to rounding of fractional square feet.

SOURCE: The Empire Group

SAN FRANCISCO AND REGIONAL OFFICE SPACE MARKET

Existing and Proposed Office Space in San Francisco

San Francisco is the major office center in the Bay Area, with approximately 60.6 million gross sq. ft. of office space at the end of 1982. During the 1970's, space in downtown office buildings was added at a rate of about 1.5 million gross sq. ft. per year; from 1980 through 1982, space was added at an average rate of about 2.4 million gross sq. ft. per year. Approximately 36.1 million gross sq. ft. of net new office space was constructed between 1960 and 1982 (see Appendix C, Table C-1, pp. A-27 to A-28). An additional 6.1 million gross sq. ft. of net new office space recently has been completed;

however, this space is not fully occupied and, as such, is not included in the base-case analysis. An additional 4.8 million gross sq. ft. of net new office space will be added when the buildings under construction (as of September 15, 1983) are finished, and another 4.7 million sq. ft. of net new office space has been approved but is not yet under construction (as of September 15, 1983). Another 3.3 million sq. ft. would be added if the projects under formal review, as of September 15, 1983, were eventually built (see Appendix C, Table C-2, pp. A-29 to A-32). This total of about 18.9 million gross sq. ft. of net new office space (under formal review, approved, under construction, or completed but not fully occupied as of September 15, 1983) includes the 505 Montgomery St. project, listed as adding about 300,600 gross sq. ft. of net office space. "Net" includes additional space, subtracting existing space on sites being developed or proposed for development.

Vacancy Rates and Commercial Rents

On the basis of a 1982 survey of 290 office buildings, the San Francisco Building Owners and Managers Association (BOMA) reported a citywide vacancy rate of 6%./2/ This rate is an increase over the 3.7% rate in an earlier 1982 BOMA survey and the 1.0% rate reported by BOMA in its 1981 survey. According to a June 1983 Coldwell Banker survey, the vacancy rate in downtown San Francisco office buildings (new, existing, and major renovations) was 7.2%./3/ This is an increase from 3.4% during June 1982 and 5.7% during December 1982 reported in earlier Coldwell Banker surveys. The vacancy rate for June 1983 is the highest reported for San Francisco since Coldwell Banker started this survey in 1978. The current 7.2% vacancy rate is the fifth lowest of the 28 major downtown financial districts in the United States surveyed by Coldwell Banker./3/ For comparison, as of June 1983, the vacancy rate was 11.7% nationally; 8.7% in Chicago; 4.2% in downtown Manhattan; and 13.1% in Dallas./3/

Both surveys indicate a continued increase in the vacancy rate for downtown office buildings over the last two years. This increase is the result of several factors, including an increase in the amount of available office space (new space being completed and space available for sublease), a short-term decrease in the demand for office space, and the continuing nationwide

economic recession. Higher vacancy rates indicate a softer office market than has existed in recent years. According to Coldwell Banker, "Demand for prime office space in San Francisco's financial district remains strong as evidenced by healthy levels of pre-leasing activity in new buildings and a June vacancy rate considerably below the national average."/3/

There has been a concurrent demand for and development of office space elsewhere in the Bay Area. Some businesses have moved their clerical, support, and production departments to outlying areas while maintaining headquarters and main branch offices in San Francisco. In particular, the City of Oakland, and San Mateo and Contra Costa Counties, are experiencing increased demand for office space. As of January 1982, about six million sq. ft. of office space was proposed for construction in Oakland over the next 10 years,/4/ about 17 million sq. ft. of office space is proposed or under construction in San Mateo County,/5/ and 15.8 million sq. ft. of space is proposed or under construction in Contra Costa County./6/ These totals include projects in various stages of public review, not all of which may be approved or built.

As a result of high demand in San Francisco and of increasing operating costs, land prices, construction costs, and interest rates, annual rents for office space in the downtown financial district have more than tripled in the last decade, from $8.50 per sq. ft. in 1970 to approximately $30 per sq. ft. in 1981. New buildings are able to charge the highest rents, while office rents in older buildings south of Market are less expensive, averaging between $10 and $15 per sq. ft./7/ The rents for new office space in San Francisco ($25 to $42 per sq. ft) are about 45% higher than commercial rents in Oakland ($18 to $27 per sq. ft.); the Peninsula ($18 to $24 per sq. ft.); and Contra Costa County ($16 to $27 per sq. ft.)./8/ Should the recent rise in vacancy rates continue, the pressure for higher commercial office rents would be expected to decline in San Francisco. A rising vacancy rate could lower rents and increase future lessees' choice of size, layout, and location of office space.

SAN FRANCISCO HOUSING

Both regional and San Francisco housing stock are characterized by low growth rates, low vacancy rates, and high purchase and rental costs in relation to typical wages paid. This combination of factors and high interest costs has tended to constrict the supply and affordability of housing in San Francisco.

San Francisco has about 316,600 occupied housing units, according to the 1980 U.S. Census; about two-thirds of the housing stock is rented and one-third is owner-occupied./9/ The number of permits for new single- and multiple-housing units in San Francisco decreased 34.4% between 1979 and 1980./10/ San Francisco housing starts in 1982 totaled about 1,550 units; of these, about 830 were low- and moderate-income units and about 720 were market-rate units./11/ The average 1980 market value of a single-family house was $140,000 in the Bay Area and $148,000 in San Francisco./12/ The 1980 Census reports a 1980 median value of $104,600 for single-family units (not including condominiums), and a vacancy rate of 1.0% for owner-occupied dwellings in San Francisco./13/ According to a statistically non-random survey of newspaper advertisements by the Department of City Planning in 1980, median advertised rents ranged from $289 for a studio apartment to $588 for a unit with 3+ bedrooms, and averaged $455 for all types of units. Census data for 1980 indicated a median rent in the City of $267 and a vacancy rate of 4.2% for rental units./13/ The Census data include residential hotels and subsidized housing. A survey conducted by the Federal Home Loan Bank of San Francisco between August and November of 1981 indicated a vacancy rate of 0.7% for multi-family units and 1.3% for single-family houses./14/ A vacancy rate of 4% to 5% indicates a competitive market; the very low rate in San Francisco means that people looking for housing are having difficulty finding new residences. This high demand for housing may also cause further price increases.

FISCAL

Property Tax Revenues

The assessed value of the project site in 1982 was approximately $4 million./15/ Under the fiscal year 1982-83 property tax rate of $1.17 per

$100 of assessed value, the site generates about $47,600 in property tax revenues. The largest portion, $40,600 or 85%, is distributed to the City and County of San Francisco; about $3,500 goes to the San Francisco Unified School District; about $600 to the San Francisco Community College District; $100 to the Bay Area Air Quality Management District (BAAQMD); and $2,800 to BART./16/

Other Taxes

The site also generates other taxes. In 1982-83, the General Fund revenues to the City and County of San Francisco from the site's sales, payroll, gross receipts, and utility taxes are estimated at about $113,000. The individual components of these tax revenues are discussed in Section IV. Environmental Impact, pp. 125-127.

Costs and Net Revenues

The City incurs costs in serving the existing buildings. Police, fire and general government expenditures are supported primarily by the General Fund. Most street-maintenance, street-improvement, and traffic-control costs are supported by other revenue sources such as fees, fines, and federal and state aid; such aid has been declining.

NOTES - Employment, Housing and Fiscal Factors

/1/ Square footage of buildings provided by project sponsor, The Empire Group, July 1983; number of current employees estimated by Environmental Science Associates, Inc.

/2/ Elmer Johnson, Building Owners and Managers Association, telephone conversation, December 22, 1982.

/3/ Coldwell Banker, "Office Vacancy Index of the United States", June 30, 1983. San Francisco vacancy rates are part of a national survey of 28 major downtown districts conducted quarterly. A copy of the June 30, 1983 survey is on file and available for public review at the Office of Environmental Review, 450 McAllister Street, Fifth Floor.

/4/ City of Oakland Department of City Planning, "Major Buildings in the Central District," January 16, 1982. No more current data on Oakland development are available from the Department.

/5/ "Proposed Specific Plan: Bayshore Office Park and Baylands Development Area, Brisbane, California", Blayney-Dyett, Urban and Regional Planners, July 1982, and "Travel Impacts of Proposed Development on the Peninsula Along Route 101", Metropolitan Transportation Commission, September 9, 1982.

/6/ "Proposed East Bay Office/Industrial Development", People For Open Space, October 1982.

/7/ Department of City Planning Memorandum to the City Planning Commission, "South of Market Interim Controls", January 26, 1982.

/8/ "The Commercial Real Estate Market in the San Francisco Bay Area", Coldwell Banker, December 1982.

/9/ Association of Bay Area Governments (ABAG), "Census Data Bulletin No. 6", March 1982.

/10/ ABAG, "Housing Activity Report, Number 3", May 1981.

/11/ San Francisco Progress Real Estate Guide, "'82 Homes Built for Moderate Income Buyers", November 5, 1982, based on information obtained from the Mayor's Office of Housing and Community Development.

/12/ Security Pacific Bank, "Monthly Summary of Business Conditions - Northern Coastal", March 31, 1981, p. 2.

/13/ San Francisco Department of City Planning, "1980 Census Information", March 1982.

/14/ Federal Home Loan Bank of San Francisco, "San Francisco County Housing Vacancy Survey", May 1982.

/15/ San Francisco Assessor's Office. The assessed value includes Assessor's Block 227, Lot 5 - $111,379; Lot 6 - $663,000; Lot 6A - $130,645; Lot 7 - $1,567,769; Lot 8 - $215,076; Lot 9 - $297,660; Lot 10 - $146,399; Lot 11 - $727,176; Lot 27 - $132,054; and Lot 28 - $80,422.

/16/ Data from San Francisco Controller's Office; calculations by Environmental Science Associates, Inc.

IV. ENVIRONMENTAL IMPACT

An application for environmental evaluation for the project was filed in September 1982. On January 7, 1983, it was determined that an Environmental Impact Report (EIR) was required, based on an Initial Study. Issues determined to require no further discussion as a result of the Initial Study include land use compatibility; noise during project operation; air quality during construction; public services and utilities; biology; land (topography, soils, geology and hydrology); hazards; and sub-surface cultural resources; therefore, this EIR does not discuss these issues. (See Appendix A, pp. A-2 - A-24, for the Initial Study.)

Some of the impacts presented in this section are not physical environmental effects as defined by the California Environmental Quality Act. They are included in the EIR for informational purposes only.

A. LAND USE AND ZONING

The project would comply with the 400-ft. height limit for the portion of the site proposed for new development. Total project height would be 366 ft., including a 16-ft. mechanical penthouse exempted from the height limit, per City Planning Code Sec. 260(a)(B).

The building length of about 120 ft. would be about 50 ft. less than the maximum permitted 170 ft., and the maximum diagonal dimension of about 170 ft. would be about 30 ft. less than the maximum permitted diagonal dimension of 200 ft. (both applicable above a height of 150 ft.). The project's total gross office and retail area of 366,390 gross sq. ft. would yield a floor area ratio (FAR) of 14:1, the maximum permitted in the C-3-O District, including 337,150 gross sq. ft. of new construction and 29,240 sq. ft. of space in the two retained buildings.

The proposed project would respond to objectives of the San Francisco Comprehensive Plan and to the City Planning Code description of the C-3-O (Downtown Office) District as playing a leading national role in finance, corporate headquarters and service industries, and as serving as an employment center for the region.

The project would be in accord with some policies of the Commerce and Industry Element of the City's Comprehensive Plan. It would respond to Objective 1, Policy 1, to maintain and enhance a favorable business climate in the City. The project would respond to to Objective 3, Policy 1 in providing jobs for San Francisco residents; clerical, janitorial, and construction jobs resulting from the project would provide "employment improvement opportunities for unskilled and semi-skilled workers." The overall employment generated by the project is found in Section IV.I. Employment, Housing and Fiscal Factors, pp. 120-121.

The project is intended to respond to Objective 4, Policy 2, to promote and attract economic activities of benefit to the City. The project would respond to Objective 6, to support San Francisco as a "prime location for financial, administrative, corporate, and professional activity." The project would respond to Policy 1 of this Objective, to encourage continued growth of downtown office activity. Policy 2 of Objective 6 is to guide "office development to maintain a compact downtown core so as to minimize displacement of other viable uses." The project would result in a net loss of up to 4,772 sq. ft. of retail space. The sponsor is considering conversion of a portion of ground-floor office space at 638-640 Sacramento St. (641 Commercial St.) to retail uses. The net loss of retail space would not respond to Policy 2 of Objective 6.

The relationship of the project to City urban design policies is discussed in Section IV.B. Urban Design and Visual Quality, pp. 60-71, and Table 4, pp. 61-64.

THE DOWNTOWN PLAN

In August 1983, the Department of City Planning published The Downtown Plan, Proposal for Citizen Review (the plan). The plan contains proposals for

comprehensive changes in controls of the scale, intensity, and location of growth in downtown San Francisco; architectural preservation; open space; sunlight access; and transportation. The Downtown Plan will undergo public review, and possible modification, before final implementation of new Master Plan and City Planning Code provisions by the City Planning Commission and the Board of Supervisors.

The relationship of the project to the major proposals of the plan is discussed below, and summarized in Table 3, p. 51. (See Section VII., Alternatives, p. 147, for an alternative conforming to the plan.

The Downtown Plan proposes that the base FAR for the C-3-O district, including the project site, be changed from 14:1 to 10:1, and would exclude ground floor retail, building service and internal circulation areas from the FAR calculation. Development greater than the base 10:1 FAR would be allowable through Transfer of Development Rights (TDR) from sites with unused potential floor-area within the same zoning district, that include architecturally significant buildings or new parks or open space. The increased floor area on the site receiving TDR, however, may not exceed the height, bulk, and other controls of the plan for that site.

The plan proposes changes in the boundaries of the existing C-3-O district: Portions of the existing C-3-O district would be made part of a new special mixed-use district to be developed for the whole of Chinatown. (The Downtown Plan does not discuss potential floor area or height and bulk controls for the Chinatown special district.) The western part of the project site (Lots 11 and 27), which includes the two project buildings proposed to be retained, would be part of that new district.

The project's total gross floor area, at a 14:1 FAR, at 366,390 sq. ft. would be about 82,690 sq. ft. greater than the 283,700 sq. ft. allowed under the plan (10:1 FAR on the 26,170 sq. ft. site, plus about 22,000 sq. ft. for ground floor uses, an effective FAR of 11:1 for the site).

The portion of the project site proposed to remain in the C-3-O district (the area proposed for new construction for the project) would be in a 250-S Height

TABLE 3: COMPARISON OF PROPOSED PROJECT WITH THE DOWNTOWN PLAN

Major Development Controls Pertaining to Project Site	Current Controls	Proposed Project	Proposed Requirements in the Downtown Plan	Alternative 2: Downtown Plan /c/
Base FAR	14:1	14:1	10:1 /a/	13:1 /a/
Height Limit	400 ft.	350 ft.	250 ft. /b/	294 ft. /b/
Average Area per Floor	18,000 sq.ft. /d/	14,000 sq.ft.	250-S Height and Bulk District.	Would meet criteria.
Maximum Diagonal Length	200 ft.	170 ft.	250-S Height and Bulk District.	Would meet criteria.
Incorporation of Art	Not required.	Art would be incorporated.	Art equal to 1% of total construction costs.	Art would be incorporated to meet criteria.
Ground-floor Retail	Retail permitted.	9,900 sq.ft. proposed.	Required; would be excluded from allowable FAR in C-3-O district.	18,000 sq.ft.
Sunlight Access	--	Would increase a.m. shadows on Portsmouth Sq. in mid-winter/early-spring and mid-summer/early-fall. (See pp. 71-78.)	Criteria based on solar fan, height and bulk and time, duration and location of shadow. Critical times are 8 am to 4 pm PST, March 21 / Sept. 21.	Would shade about 10% of Portsmouth Sq. at 8-8:30 am (9-9:30 PDT). Alt. 2A would not shade Portsmouth Sq. (See p. 152.)
Recreation / Open Space	Not required.	None.	1 sq.ft. for public use per 50 sq.ft. of gross floor area; 6,740 sq.ft. for project.	6,680 sq.ft.; would be met by off-site development of public open space.
Off-street office; Loading	2 spaces required.	2 spaces.	0.1 space per 10,000 sq. ft. of office gross floor area for buildings containing more than 10,000 sq.ft.; 1 space for 10,000-50,000 sq.ft. of retail area. 3 spaces required for project.	4 spaces (3 for office; 1 for retail).
Long-term Parking	None required.	23 spaces.	Discourage new long-term parking in downtown.	No long-term parking.

/a/ Downtown Plan would exclude ground-floor retail, building service and internal circulation areas from FAR; additional floor area in excess of 10:1 in Alternative 3 reflects Transfer of Development Rights, permitted in the Downtown Plan.
/b/ Additional height up to 10% above limit permitted with reduced bulk, or for mechanical space or usable penthouse space within 50-degree planes from edge of roof.
/c/ See Section VII., Alternatives, pp. 147.
/d/ Based on 400-I Height and Bulk limits.

SOURCE: City Planning Code; The Downtown Plan, Proposal for Citizen Review, August 1983; Skidmore, Owings and Merrill; Environmental Science Associates, Inc.

and Bulk District, permitting structures up to 250 ft. in height (with exceptions noted below). At 350 ft., the project would exceed the proposed height limit by up to 100 ft. The "S" bulk designation would control building dimensions, floor sizes and bulk through Downtown Plan Bulk Control Zone Charts A and B. Essentially, these would require setbacks, smaller floor sizes and slimmer building profiles as building height increased. For a 250-ft. building on the project site, the proposed controls would require a base zone, related to the width of the widest abutting street (in this case, Montgomery St.), delineated by a setback, cornice or other architectural feature, and a lower tower zone that could be developed out to the lot lines (if there were no setbacks from the base zone). An upper tower zone would begin at a height of 200-ft.; average floor area in this zone could not exceed 12,000 sq. ft., and building volume would be required to be reduced by about 20%, compared to a straight vertical extension of the lower tower.

Two optional upper tower extensions would be permitted, to allow for flexibility of design and to encourage slender and more sculptured building tops. Option I would be a 10% increase in permitted building height, with further reduction of upper tower volume, controlled by Bulk Control Zone Chart B. Option II would permit mechanical equipment, decorative roof construction, or usable penthouse space above the height limit, but within the volume formed by planes sloping inward from the outer edge of the roof at a 50-degree angle with the horizontal. The plan would allow steeples, pylons or other features with a cross-sectional area of less than 100 sq. ft., with additional height of up to 75 ft. The plan would require distinctive building tops on new buildings, such as cornices, parapets, hip roofs or domes.

The plan would require usable public indoor or outdoor open space as part of new downtown development. In the C-3-O district, a 1:50 ratio of open space to building space would be required. The Plan would allow the open space requirement of new buildings to be met off-site by the project sponsor by development, or funding of development, of open space on public land. No open space is proposed as part of the project. Applied to the project, the 1:50 ratio would yield a 6,740 sq. ft. requirement.

B. HISTORIC, ARCHITECTURAL AND CULTURAL RESOURCES

The project would demolish eight structures at the eastern portion of the site and retain two buildings on the western portion. The buildings proposed to be demolished include: 616-618 Sacramento St., 624 Sacramento St., 628-630 Sacramento St., 501-505 Montgomery St., 517-519 Montgomery St., 527 Montgomery St., 615-617 Commercial St. and 627-629 Commercial St. With the exception of 501-505 and 517-519 Montgomery St., all of the above buildings are rated "C" by the Foundation for San Francisco's Architectural Heritage (in the Splendid Survivors survey, or the C-3 District survey; see Appendix B, pp. A-25 to A-26). "C" rated buildings are defined by Heritage as of contextual importance, providing the setting for more important buildings and adding visual diversity and architectural character to the downtown area (see Section III, Environmental Setting, p. 29). The buildings proposed to be demolished are not on the City's List of Architecturally and/or Historically Significant Buildings in the Downtown. The demolition of these older, low-rise structures and their replacement by a high-rise building would alter the context of designated City Landmarks in the vicinity of the site, including Jack's Restaurant, at 615 Sacramento St., across the street from the site; 440 and 460 Montgomery St., the facades of which are being incorporated in the 456 Montgomery St. project; and the Old Sub-Treasury Building, at 608 Commercial St., being restored as part of the Bank of Canton project.

The project would retain "C" rated buildings at 638-640 Sacramento St. and 653-655 Commercial St. The site buildings are discussed below, in order of date of construction.

527 Montgomery St. (built in 1906, the oldest building on the site), is rated "C" in the original Heritage survey (Splendid Survivors). The two-story brick building's upper story has a horizontal projecting window band and lintel,/1/ and a boxed cornice/2/ with a tile roof (see Figure 13, p. 54).

The following buildings are rated "C" in the Heritage C-3 survey: 616-618 Sacramento St. (1907), is a three-story rectangular stone masonry structure with deeply recessed windows and a slightly projecting window sill and lintel (see Figure 14, p. 55). 638-40 Sacramento St. (1907) has entrances

(1) 501-505 Montgomery St.(to be demolished)
(2) 517-519 Montgomery St. (to be demolished)
(3) 527 Montgomery St. (to be demolished)
(4) 615-617 Commercial St. (to be demolished)
(5) 624 Sacramento St. (Entrance on Sacramento St.)(to be demolished)
(6) 627-629 Commercial St.(to be demolished)
(7) 638-640 Sacramento St.(to be retained)

FIGURE 13

View Southwest of Project Site, From Montgomery and Commercial Streets

SOURCE:
Environmental Science Associates, Inc.

(1) 628-630 Sacramento St. (to be demolished)

(2) 624 Sacramento St. (to be demolished)

(3) 616-618 Sacramento St. (to be demolished)

FIGURE 14

View of 616-618, 624 and 628-630 Sacramento Street

SOURCE:
Environmental Science Associates, Inc.

on both Commercial and Sacramento Sts. The three-story Sacramento St. facade a later modification, is rectangular masonry broken by long horizontal windows at each level (see Figure 15, p. 57). The Commercial St. facade (also known as 641 Commercial St.) has a ground floor of four window bays divided by pilasters. The second and third floors have five irregularly spaced and sized windows. (See Figure 16, p. 58.) 615-617 Commercial St. (1907) is a two-story building with large-pane horizontal windows at the ground level and a series of Ionic pilasters at the second level. The building has a detailed cornice at the top and rustication at the ground level./3/ The DCP inventory rates the building "1". (See Figures 13 and 17, pp. 54 and 59.)

627-629 Commercial St. (1910) is a two-story grey brick building, with three small arched windows at the second level (see Figure 17, p. 59). The DCP inventory rates the building "0". 628-630 Sacramento St. (1910) is a two-story red brick building with a modified cornice and horizontal-facade banding (see Figure 14, p. 55). 624 Sacramento St. (1920) is a two-story pink and brown masonry building, with a service entrance on Commercial St. (see Figures 14 and 17, pp. 55 and 59). 653-655 Commercial St. (1923) is a two-story masonry building with pilasters running the height of the building (see Figure 16, p. 58).

501-505 Montgomery St. (1950) is a four-story building, with three horizontal window rows juxtaposed with vertical aluminum panels at the right side of the Montgomery St. frontage (see Figures 13 and 15, pp. 54 and 57). 517-519 Montgomery St. (1950) is a two-story building with a plain facade and a row of horizontal windows (see Figure 13, p. 54). Neither of these two buildings is rated by Heritage or by the Department of City Planning survey.

Four categories of architecturally significant buildings and development controls are proposed in the Downtown Plan: Category I - Significant Building, Retain Essentially Intact; Category II - Significant Building, Retain, Allow Modification; Category III - Contributory Building, Encourage Retention, Allow Replacement; Category IV - Contributory Building, Encourage Retention as Part of Conservation District, Allow Replacement. Unused

(1) 501-505 Montgomery St. (to be demolished)
(2) 616-618 Sacramento St. (to be demolished)
(3) 624 Sacramento St. (to be demolished)
(4) 628-630 Sacramento St. (to be demolished)
(5) 638-640 Sacramento St. (to be retained)

FIGURE 15

View East of Project Site,
From Sacramento Street at Spring Street

SOURCE:
Environmental Science Associates, Inc.

(1) 527 Montgomery St. (to be demolished)

(2) 615-617 Commercial St. (to be demolished)

(3) 624 Sacramento St. (Commercial St. Entrance) (to be demolished)

(4) 627-629 Commercial St. (to be demolished)

(5) 638-640 Sacramento St. (641 Commercial St.) (to be retained)

(6) 653-655 Commercial St. (to be retained)

FIGURE 16

View East of Project Site, From Mid-Block Commercial Street

SOURCE:
Environmental Science Associates, Inc.

(1) 615-617 Commercial St. (to be demolished)

(2) 624 Sacramento St. (Commercial St. Entrance)(to be demolished)

(3) 627-629 Commercial St. (to be demolished)

FIGURE 17

View of 615-617 Commercial Street,
624 Sacramento Street and 627-629 Commercial Street

SOURCE
Environmental Science Associates, Inc

developable floor area on sites of buildings that are retained could be used for TDR to other sites in the same zoning district. No buildings on the project site are included in any of these categories.

In the context of project relationships to nearby buildings, buildings in the immediate project vicinity listed in the above categories are the Old Sub-Treasury Building at 608 Commercial St. (Category I), and Jack's Restaurant at 615 Sacramento St. (Category III). Both are designated City Landmarks. (See Section III, Environmental Setting, p. 31 for discussion of architectural resources in the site area.)

The plan also proposes designation of conservation districts to "facilitate preservation of the quality and character of the area as a whole." The nearest proposed district to the site is the Commercial - Leidesdorff Conservation District, directly east of the site, three-quarters of the block bounded by Montgomery, Clay, Sansome and Sacramento Sts. The character of this district is formed by a group of small buildings of varied architectural styles, generally 30 ft. to 60 ft. in height, and by the intersection of two narrow streets, Commercial and Leidesdorff (Downtown Plan, p. 75). The plan proposes a 75-ft. height limit in this district.

NOTES - Historical, Architectural and Cultural Resources

/1/ A lintel is a horizontal architectural member spanning an opening, as a door or window, to carry a superstructure.

/2/ A cornice is a molded projecting member crowning a facade.

/3/ Rustication refers to beveled edges of stone blocks which make the joints conspicuous.

C. URBAN DESIGN AND VISUAL QUALITY

The Relationship between Applicable Urban Design Policies of the Comprehensive Plan and the Proposed Project, Table 4, pp. 61-64, compares the project to policies of the Urban Design Element of the San Francisco Comprehensive Plan.

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE COMPREHENSIVE PLAN AND THE PROPOSED PROJECT

URBAN DESIGN POLICIES	RELATIONSHIP OF PROJECT TO POLICIES
A. Policies for City Pattern	
Policy 1. "Recognize and protect major views in the City, with particular attention to those of open space and water." (p. 10)	The project site is outside major designated view corridors along Pine St. and California St. The project is outside the Portsmouth View Corridor. The project would obstruct views of Portsmouth Square from 456 Montgomery St., under construction.
Policy 3. "Recognize that buildings, when seen together, produce a total effect that characterizes the City and its districts." (p. 10)	The project would be visible from medium- and long-range view points. From Portsmouth Square and Nob Hill, the project would be visible as part of a group of existing and under construction high-rise structures of the Financial District. From other long-range viewpoints, such as Twin Peaks, the project would not be visible because of existing, intervening structures. In short-range views, the project tower would alter the small-scale character of the area. Together with newer, adjacent and nearby high-rise buildings (e.g., Bank of Canton, 601 Montgomery St., and 655 Montgomery St.), the project would define the northwest edge of the Financial District.
Policy 6. "Make centers of activity more prominent through design of street features and by other means." (p. 12)	The project would retain two buildings on Commercial St., refurbish their facades, and provide widened sidewalks and decorative street paving along its frontage consistent with proposals recommended in the Center City Circulation Study. Existing retail uses in the two buildings would be retained or increased. The project tower would remove some street- level retail uses on Commercial St., and would include ground-floor retail uses fronting Commercial St., Montgomery St. and Sacramento St.

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE COMPREHENSIVE PLAN AND THE PROPOSED PROJECT (CONTINUED)

URBAN DESIGN POLICIES	RELATIONSHIP OF PROJECT TO POLICIES
B. Policies for Conservation	
Policy 4. "Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development." (p. 25)	The project would demolish eight buildings, six of which were C-rated in the Heritage survey. The project would retain two buildings rated "C" in the Heritage survey. No buildings on the site are on the City's List of Historically and/or Architecturally Significant Buildings in the Downtown.
Policy 6. "Respect the character of older development nearby in the design of new buildings." (p. 25)	The project tower would differ in form and scale from neighboring older buildings on Commercial, Montgomery and Sacramento Sts. The building facade materials would be stone, metal and glass; older buildings are generally faced in stone, brick or terra cotta. The project would introduce a high-rise building on this half of the block of two- to five-story buildings and would alter the setting of several City Landmark buildings in the project area. The project would retain two older low-scale buildings on Commercial and Sacramento Sts.
C. Policies for Major New Development	
Policy 1. "Promote harmony in the visual relationships and transitions between new and older buildings." (p. 36)	See Items 4 and 5 above. The scale of Commercial St. would be altered by the project and the adjacent Bank of Canton Headquarters, under construction. These two buildings at Commercial and Montgomery Sts. would contrast with lower scale buildings to the west. The project would retain two older low-scale buildings on Commercial and Sacramento Sts. A setback at the eighth floor is intended to relate to the Bank of

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE COMPREHENSIVE PLAN AND THE PROPOSED PROJECT (CONTINUED)

URBAN DESIGN POLICIES	RELATIONSHIP OF PROJECT TO POLICIES
Policy 1. (Continued)	America building at 540-560 Montgomery St. at Clay St. The building's tapered top section would begin at the same height as the first setback on the Bank of Canton tower, across Commercial St.
"Policy 2. "Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance." (p. 36)	The project tower would use polished light grey granite and a similarly colored non-reflective glass as its primary facade materials. The building's top section would be sloped to create a distinctive roof profile. The project tower would terminate in a spire.
Policy 4. "Promote building forms that will respect and improve the integrity of open spaces and other public areas." (p. 36)	The project site is not adjacent to public open space. The project would increase shadows in Portsmouth Square during the morning hours in the mid-winter/early-spring and late-summer/mid-fall months. The project would block views of Portsmouth Square from buildings southeast of the site.
Policy 5. "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development." (p. 36)	See Items 2, 4 and 5 above. The project would be visible on the City skyline from Nob Hill and Russian Hill. The 350-ft. project would be taller than nearby low-rise buildings to the west and immediately to the east, which are generally under 70 ft. in height. The project would be taller than the Holiday Inn (315 ft.), the 601 Montgomery St. building (280 ft.) and the Bank of Canton Headquarters (290 ft.). At 350 ft., the proposed building would be shorter than the 378-ft. high 456 Montgomery St. building, and about half the height of the Transamerica Pyramid (850 ft.).

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE COMPREHENSIVE PLAN AND THE PROPOSED PROJECT (CONTINUED)

URBAN DESIGN POLICIES	RELATIONSHIP OF PROJECT TO POLICIES
Policy 6. "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction." (p. 37)	See Items 2, 4, 5 and 6 above. The project would be greater in bulk than older low-rise buildings nearby, outside the C-3-O district, or in Chinatown to the west. The maximum horizontal dimensions of the project would be comparable to those of some nearby structures in the Financial District.

SOURCE: Urban Design Element, San Francisco Comprehensive Plan, 1971; Environmental Science Associates, Inc.

PROJECT VISIBILITY

Views of the project from adjacent streets would include all, or most of, the project tower. From nearby street-level locations on Sacramento, Montgomery and Commercial Sts., views of the project would include the full height of the tower. The tower would contrast in scale with the low-rise (less than 70 ft. high) structures on Commercial St. to the west and east. (See Figure 18, p. 66.) The tower would alter the setting of the City Landmark Old Sub-Treasury Building, directly across Commercial St. That building is under restoration as part of the Bank of Canton project; the Bank tower is set back 16 ft. from the facade of the Sub-Treasury. The two site buildings at 638-640 Sacramento St. and 653-655 Commercial St., proposed to be retained, would maintain the scale of this portion of Sacramento and Commercial Sts. (See Figure 19, p. 67, and Figures 15 and 16, pp. 57-58.) From points north of the site on Montgomery St., views of the project tower would be partially blocked by the Bank of Canton headquarters, under construction. From points south of the site on Montgomery St., views of the project tower would be partially blocked by the Financial Center Building at 405 Montgomery St., and the Kemper Building at 417 Montgomery St. (See Figure 20, p. 68.) The tower would differ in scale from the "banking temple" architecture of Montgomery St., including 460, 500, and 520 Montgomery St.

The project would interrupt views to the south from the windows on the south elevation of the Bank of Canton headquarters, and would interrupt views southwest from portions of the Transamerica Pyramid below the 26th floor. Views northwest from 400 Sansome St. and 456 Montgomery St. (under construction) would be partially blocked by the project. From Chinatown and Nob Hill, west of the project, the project tower would replace views of low-rise buildings that form a foreground to the Financial District buildings to the east and south (see Figure 21, p. 69). From Portsmouth Square, the project would partially block views of some buildings to the southeast; it would not obstruct any views of the Bay, as these views are obstructed by existing high-rise development (see Figure 22, p. 70). The project would be visible from Portsmouth Square as part of a group of office towers on Montgomery St. between Sacramento and Washington Sts., including

(1) Bank of Canton (under construction)

(2) PROJECT

FIGURE 18

View East of Project

From Commercial Street, East of Kearny Street

SOURCE:
Walter Thomason & Associates; and Environmental Science Associates, Inc. (Base Photography)

(1) Bank of Canton (under construction)

(2) PROJECT

FIGURE 19

View East of Project,

From Sacramento Street at Kearny Street

SOURCE:

Walter Thomason & Associates; and Environmental Science Associates, Inc (Base Photography)

1. Bank of Canton (under construction)
2. PROJECT
3. Kemper Building
4. Financial Center Building
5. Kohl Building

FIGURE 20

View North of Project,
From Montgomery Street at California Street

SOURCE
Walter Thomason & Associates, Environmental Science Associates, Inc. (Base Photography)

(1) Bank of Canton (under construction)

(2) PROJECT

(3) 456 Montgomery St. (under construction)

(4) 580 California St. (under construction)

(5) Hartford Building

(6) 333 California St. (under construction)

(7) Bank of America

FIGURE 21

View of Project From Nob Hill

SOURCE
Walter Thomason & Associates and Environmental Science Associates, Inc. (Base Photography)

1. Bank of Canton (under construction)
2. PROJECT
3. Citicorp Building (under construction)
4. 580 California St. (under construction)
5. Bank of America

FIGURE 22

View of Project From Portsmouth Square

SOURCE:
Walter Thomason & Associates; and Environmental Science Associates, Inc. (Base Photography)

601 Montgomery St., the Transamerica Pyramid, the Bank of Canton and 456 Montgomery St. (under construction).

The project would be visible in the downtown skyline from some long-range view points. The top of the proposed structure would be visible from Telegraph Hill, but the bulk of the building would be blocked by the Transamerica Pyramid, 601 Montgomery St., and the Bank of Canton headquarters and 655 Montgomery St. buildings under construction. These buildings of the Financial District are man-made vertical elements which contrast with the slope of Nob Hill seen from Telegraph Hill.

When viewed from long-range viewpoints on the northeast, north and west, the project would not be a major visual focus, because of the prominence of taller structures in the downtown skyline. The project would not be visible from southern approaches to the City on the James Lick and Bayshore freeways or from Potrero Hill, because of intervening structures.

Views north from the project tower would include the Bank of Canton headquarters and the Transamerica Pyramid. Views to the east and south would include medium- and high-rise buildings in the Financial District. To the west, views would include Chinatown and Nob Hill.

D. SHADOW AND WIND

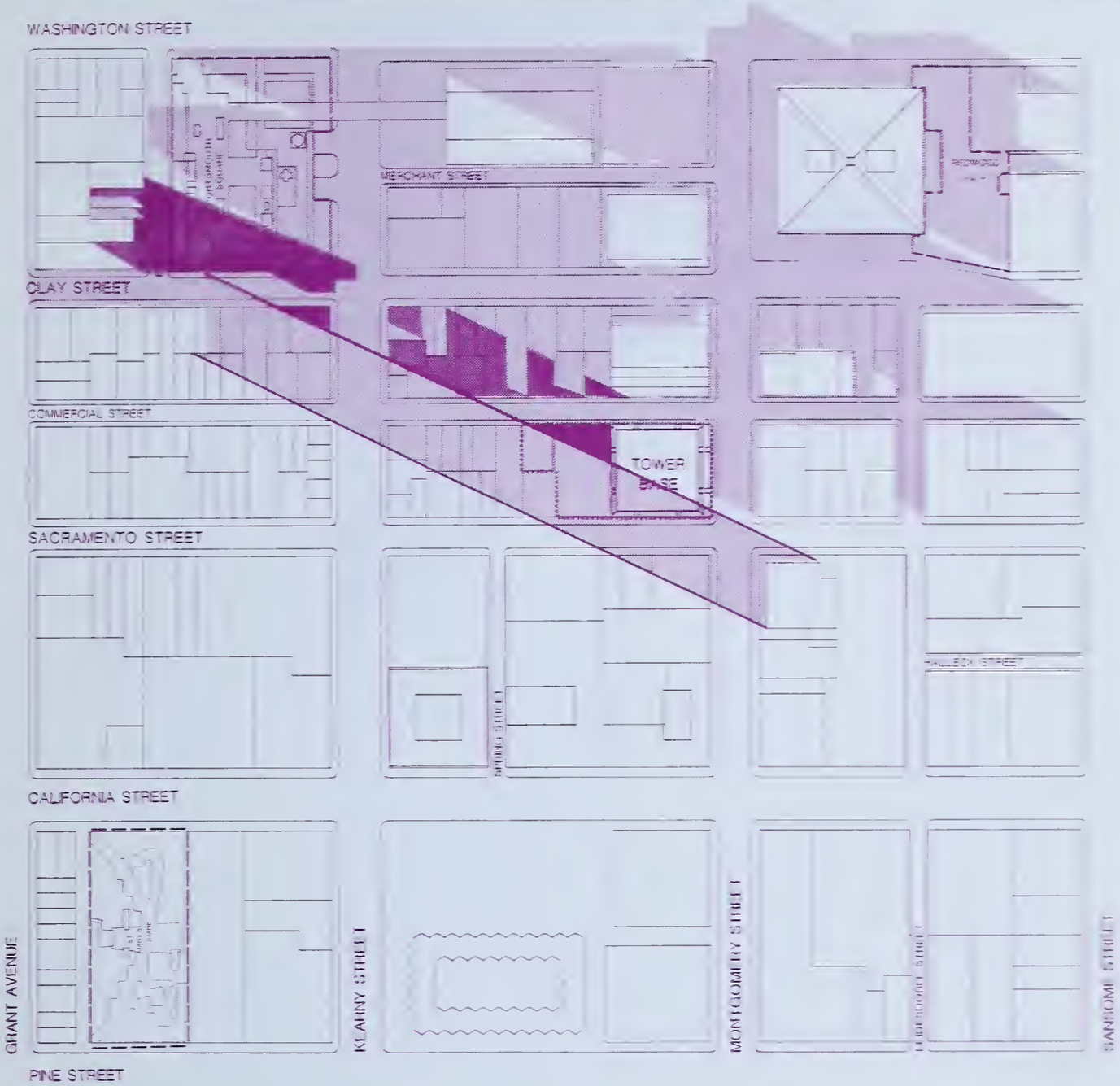
SHADOW

Project shadow effects were analyzed through a computer graphics program developed by the project architect, Skidmore, Owings & Merrill. The shadow graphics in this report are based on that work, with review and additional analysis by Environmental Science Associates./1/ The times of day discussed below represent the worst-case project shadow effects on Portsmouth Square, Redwood Park, and Commercial St.

The project tower would increase morning shadows in Portsmouth Square, in mid-winter/early-spring and late-summer/mid-fall months. From about January 7 to April 21, and from August 21 to November 7, the project tower would newly shade 10-40% of Portsmouth Square (for a maximum of two hours). Shading of the park in January and February would be about 10% to 15%, for about one hour. In March and April, shading would be 10% to 40%, with some effects over a two-hour period, until about 9 a.m. At other times of the year the project would cast new shadows covering 5% or less of the Square. The maximum effects would occur about March 21 and September 21. (See Figures 23-27, pp. 73-77.) At 8:00 a.m. Pacific Standard Time (PST) on March 21 and 8:48 a.m. Pacific Daylight Time (PDT) on September 21, the project tower would shade about one-third (the southerly section) of the Square (see Figure 23, p. 73). With existing shadows and those from the Bank of Canton (under construction), about 90% of the park would then be shaded, the worst-case effect. The project tower would shade low-rise buildings west of Brenham Place, and on the north side of Commercial St. in the project block at this time. At 8:30/9:18 a.m. (March/September), the project tower would shade about 30% of Portsmouth Square (see Figure 24, p. 74). The northwestern quarter and the southwest corner would be in sunlight at this time. By 9:00/9:48 a.m. (March/September), the project tower would shade the southeasterly corner of the Square (see Figure 25, p. 75). The remainder of the park would be in sunlight. The project tower would also shade the northeasterly portion of the Kearny/Clay St. intersection and about half of the Commercial St. frontage of the Bank of Canton.

Observations of Portsmouth Square in April 1983 on two week days and one weekend day, from 8:00 a.m. to 4:00 p.m., indicate that the number of people in the Square between 8:00 a.m. and 10:00 a.m. ranges from about 50 to 125. Peak activity in Portsmouth Square occurs between noon and 3:00 p.m., with a maximum of 300 to 450 people observed about 2:00 p.m./2/

In March/September at 1:00/1:48 p.m., the project tower would shade most of Commercial St. near the project site, adding to shadows cast by existing buildings on the site (see Figure 26, p. 76). It would also shade parts of Montgomery St., including the east sidewalk (from Commercial St., to Clay St.). At 3:00/3:48 p.m. during March/September, the project tower would add



Existing Shadow

Under Construction Building Shadow

Project Shadow (New Shadow Only)

Project Site

Open Space

FIGURE 23

Project Shadow Pattern –
March/September 21, 8:00/8:48 A.M.

SOURCE
Skidmore, Owings & Merrill, and Environmental Science Associates, Inc.

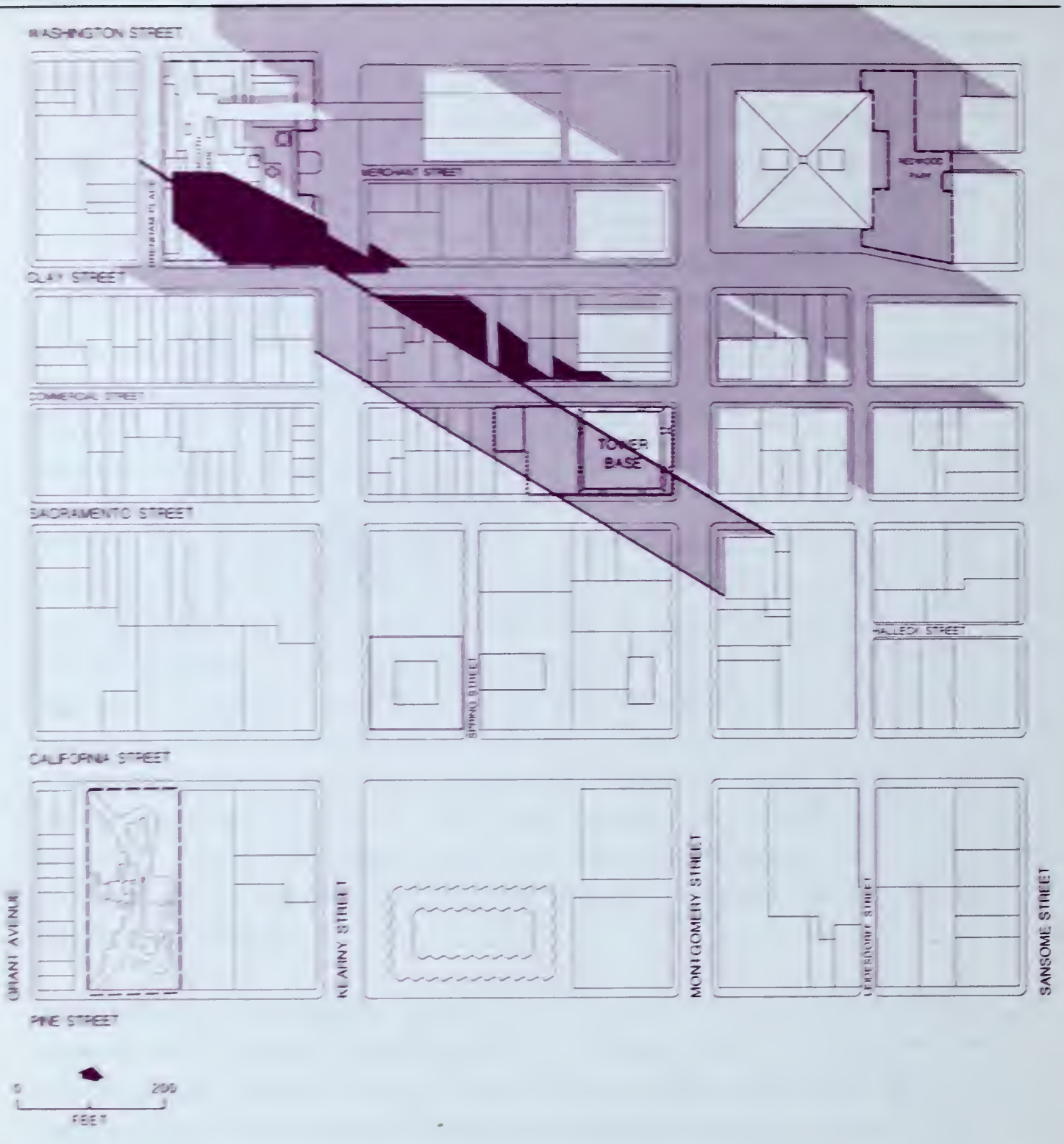
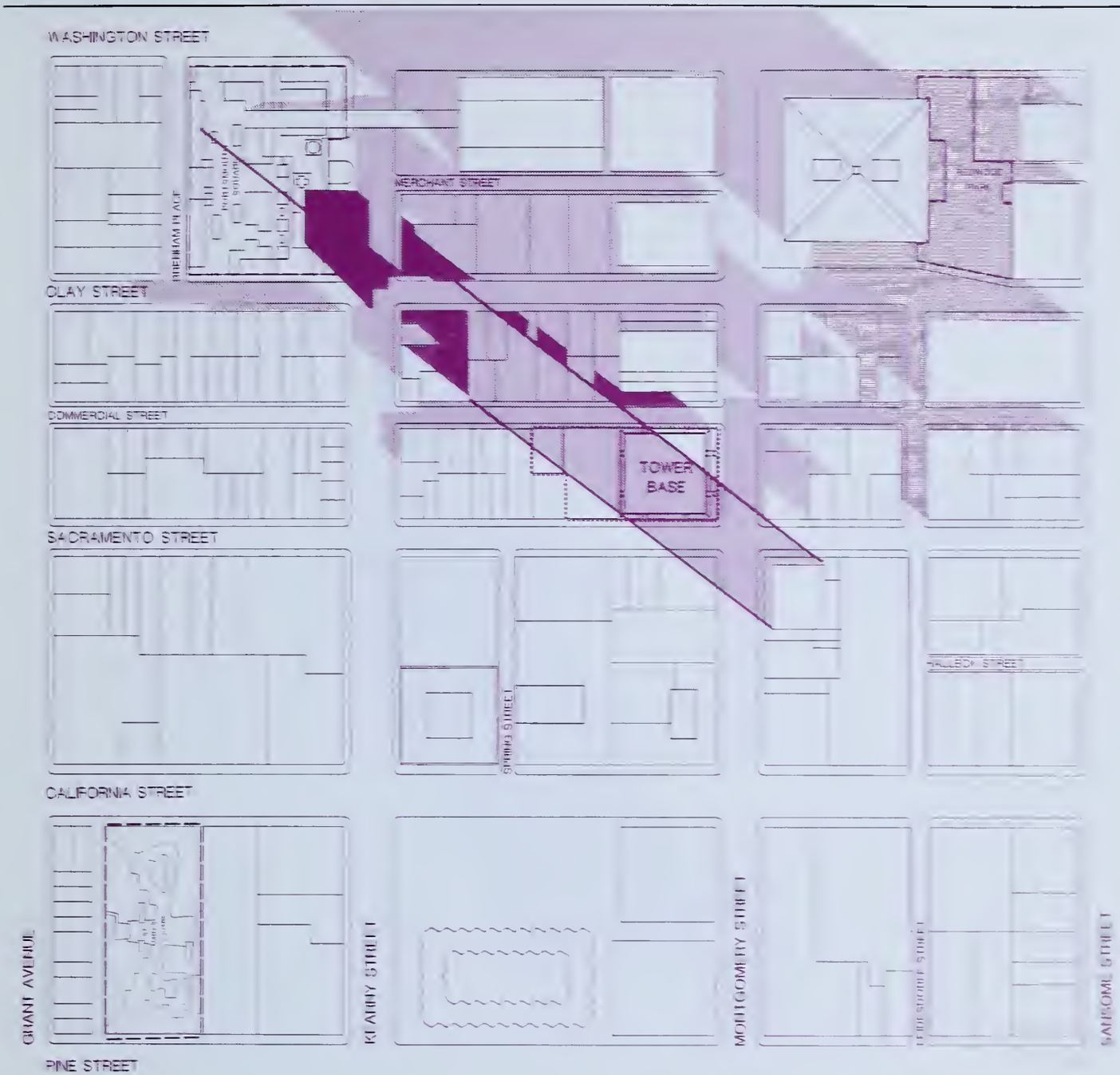


FIGURE 24

Project Shadow Pattern – March/September 21, 8:30/9:18 A.M.

SOURCE: Skidmore, Owings & Merrill, and Environmental Science Associates, Inc.



Existing Shadow

Under Construction Building Shadow

Project Shadow (New Shadow Only)

Project Site

Open Space

FIGURE 25

Project Shadow Pattern – March/September 21, 9:00/9:48 A.M.

SOURCE: Skidmore, Owings & Merrill and Environmental Science Associates, Inc.

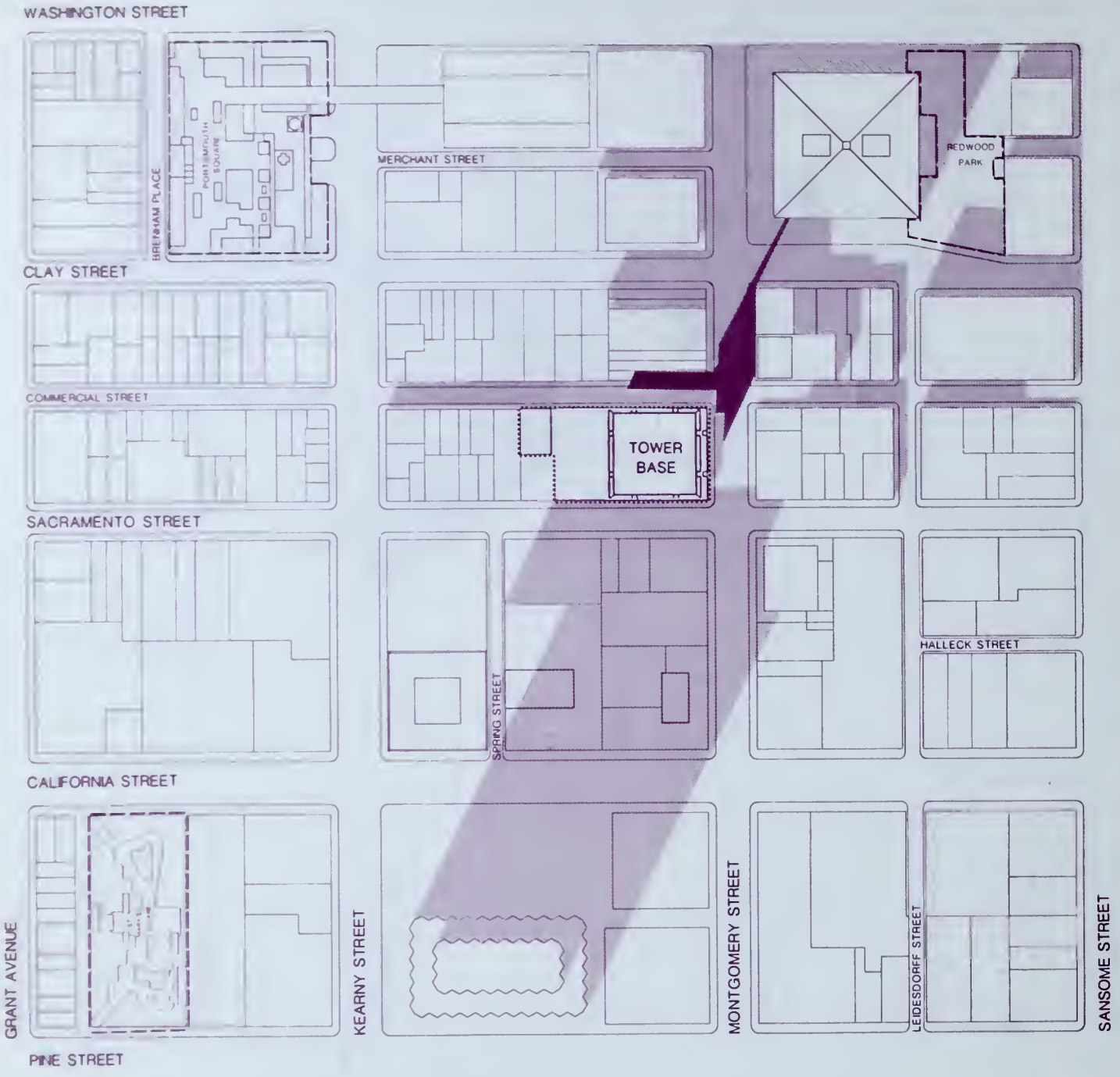


FIGURE 26

Project Shadow Pattern –
March/September 21, 1:00/1:48 P.M.

SOURCE:
Skidmore, Owings & Merrill, and Environmental Science Associates, Inc.

FIGURE 27

Project Shadow Pattern –
March/September 21, 3:00/3:48 P.M.

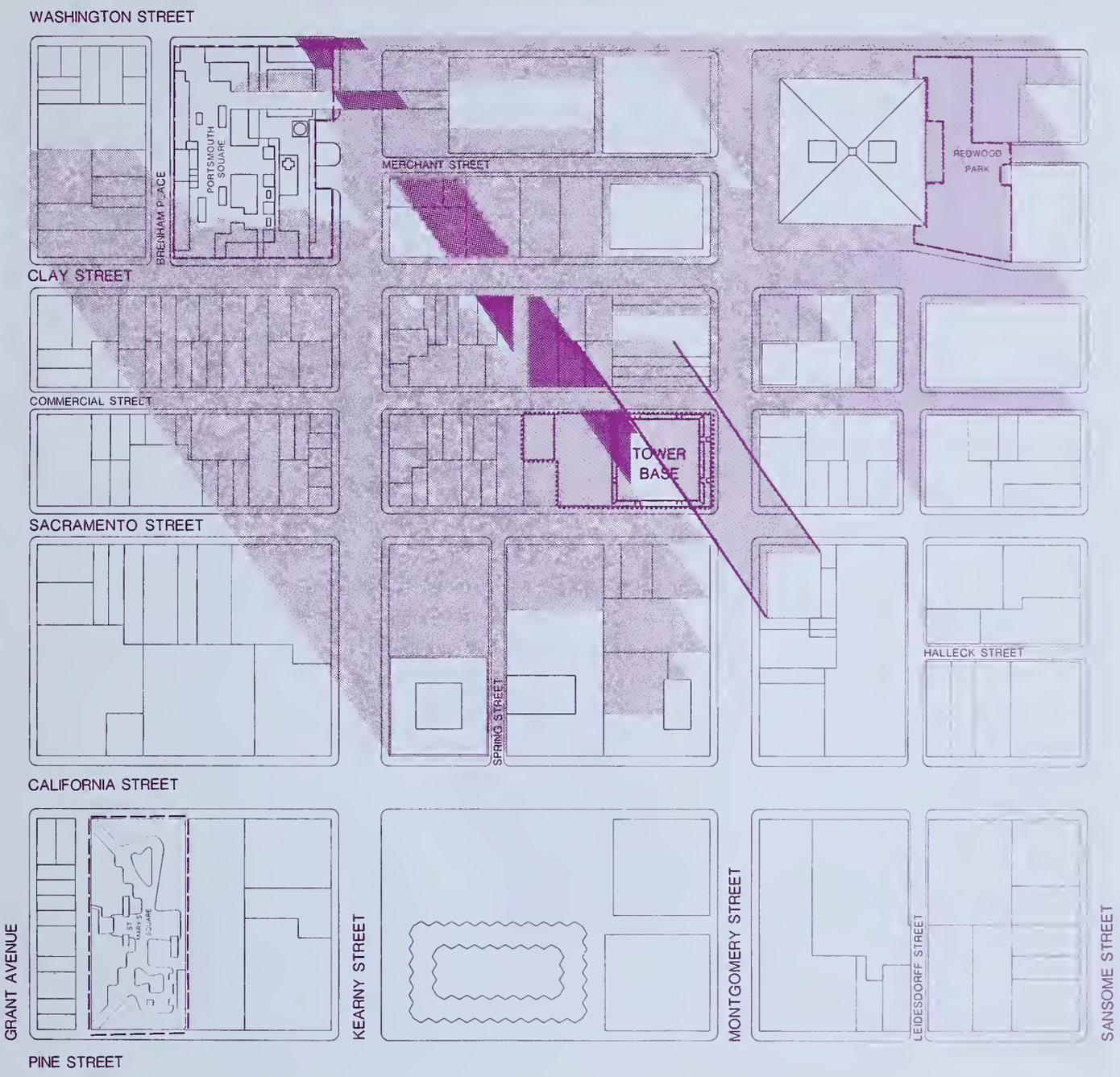
SOURCE
Skidmore, Owings & Merrill, and Environmental Science Associates, Inc

to existing shadows and those from the Bank of Canton on Montgomery and Commercial Sts., including the entire intersection (see Figure 27, p. 77). The southeast part of Montgomery St. between Commercial and Clay Sts. would be partly shaded by the project tower. The project tower would shade the Clay St. sidewalk south of Redwood Park, south of a shadow cast by the Bank of Canton.

In mid-December at 9:00 a.m., the project tower would cast new shadows on a small portion of the northeast corner of Portsmouth Square, and the Kearny/Washington Sts. intersection (see Figure 28, p. 79). In late morning, Portsmouth Square is shaded by the Bank of America headquarters. At 1:00 p.m., the project would not cast new shadows because of the existing shadow of the 768-ft. Bank of America tower and other existing high-rise structures (see Figure 29, p. 80). The project would not cast new afternoon shadows.

During mid-summer, at 9:00 a.m. PDT in mid-June, the project tower would shade the low-rise buildings on and west of the site, including those on the project block and on the northeastern corner of the block between Commercial and Sacramento Sts. west of Kearny St. (see Figure 30, p. 81). The project tower would also shade Commercial St. west of the site, to about 100 ft. west of Kearny St. The project would not cast shadows on Portsmouth Square. At 1:00 p.m. (Daylight Time), the project tower would shade Commercial Street adjacent to the project site, including the Old Sub-Treasury Building (see Figure 31, p. 82). At 4:00 p.m. PDT, the project tower would shade the low- and medium-rise buildings on the block east of the site between Sacramento and Commercial Sts. (see Figure 32, p. 83). It would also shade Montgomery St. in this block.

The report, "Sun and Light for Downtown San Francisco"/3/, includes a solar fan diagram indicating that a structure 200 ft. or higher on most of the project site, and a structure 300 ft. or higher on the southerly portion would add shade to Portsmouth Square between March 21st and September 21st, between 8:00 a.m. and 4:00 p.m. Standard Time (9:00 a.m. and 5:00 p.m. Daylight Time) (see Figure 33, p. 84). This would be consistent with project shadow effects discussed above, which indicate the maximum extent of morning shadows cast by



Existing Shadow

Under Construction Building Shadow

Project Shadow (New Shadow Only)

Project Site

Open Space

FIGURE 28

Project Shadow Pattern – December 21, 9:00 A.M.

SOURCE
Skidmore, Owings & Merrill, and Environmental Science Associates, Inc

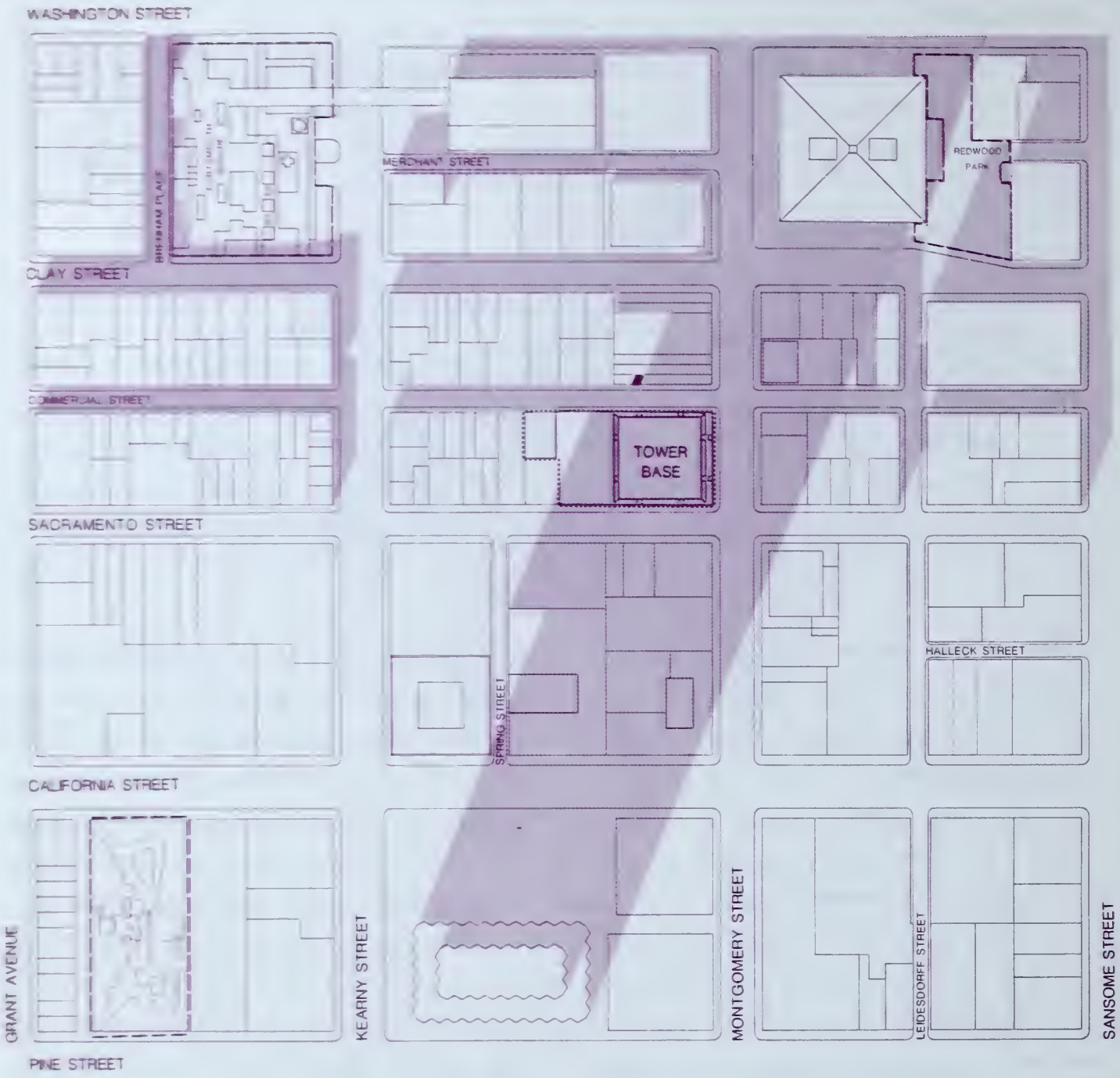


FIGURE 29

Project Shadow Pattern – December 21, 1:00 P.M.

SOURCE
Skidmore, Owings & Merrill, and Environmental Science Associates, Inc.

Existing Shadow

Under Construction Building Shadow

Project Shadow (New Shadow Only)

Project Site

Open Space

FIGURE 30

Project Shadow Pattern – June 21, 9:00 A.M.

SOURCE
Skidmore Owings & Merrill, and Environmental Science Associates, Inc

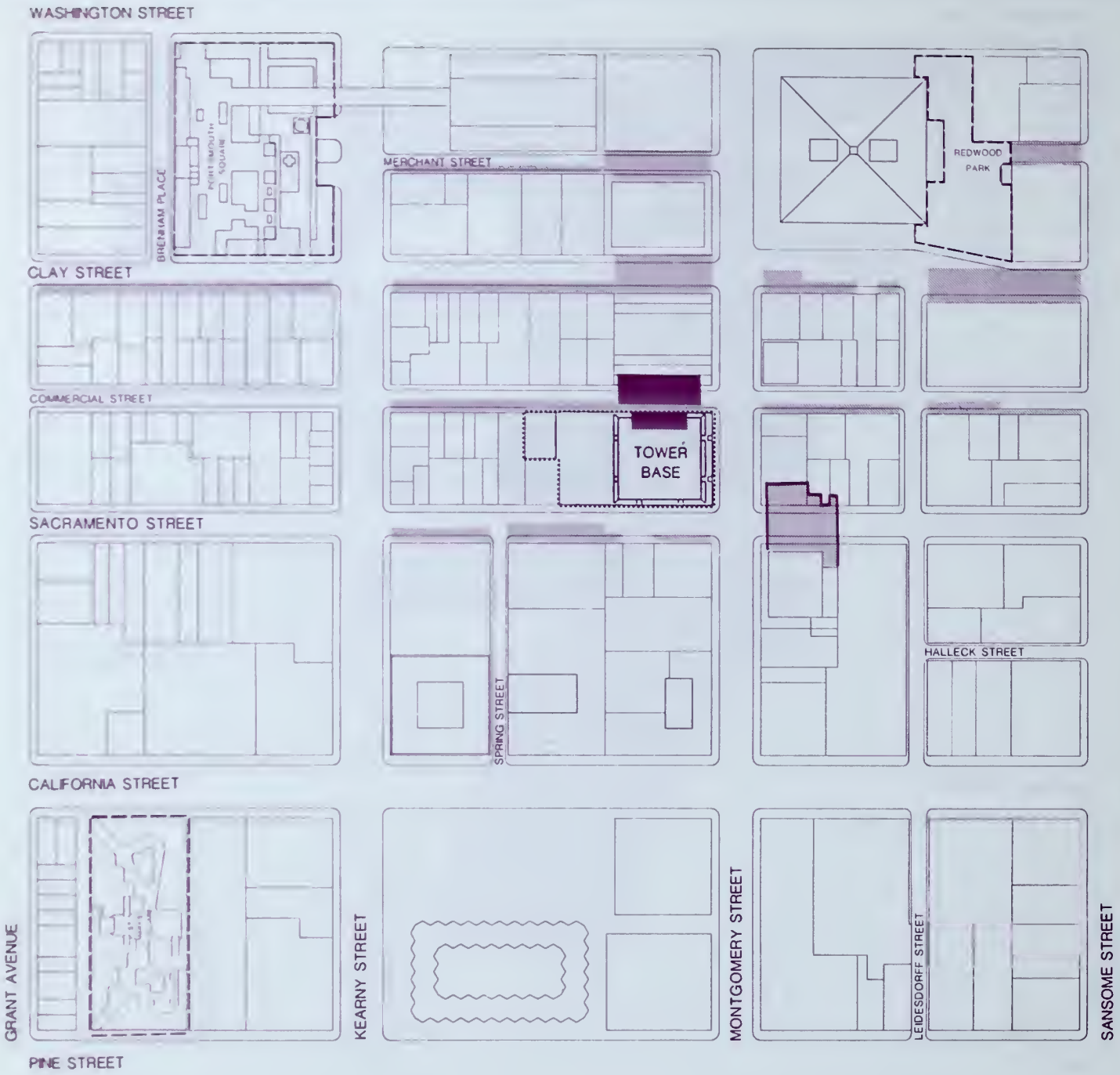
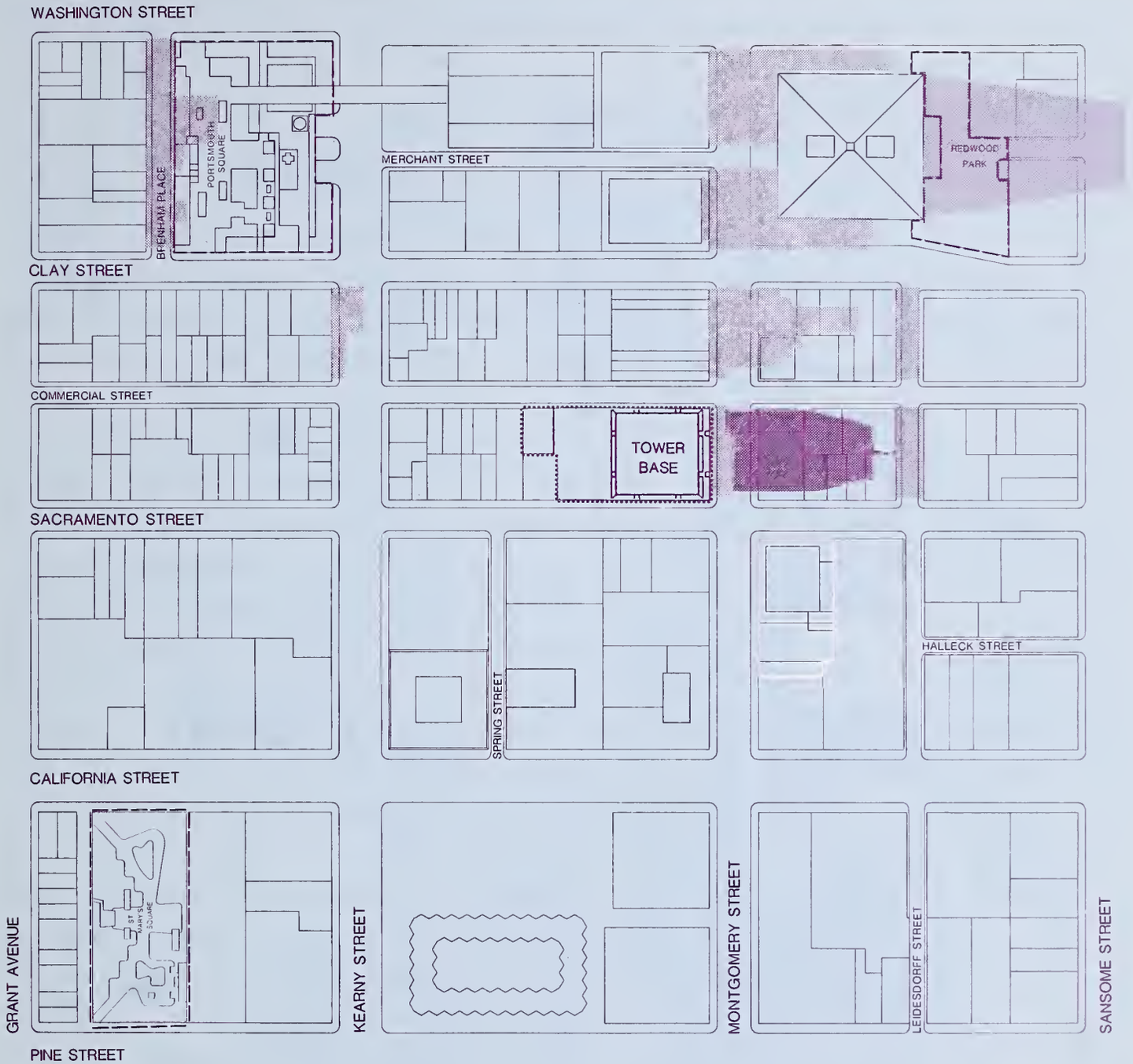


FIGURE 31

Project Shadow Pattern – June 21, 1:00 P.M.

SOURCE: Skidmore, Owings & Merrill, and Environmental Science Associates, Inc.



Existing Shadow

Under Construction Building Shadow

Project Shadow (New Shadow Only)

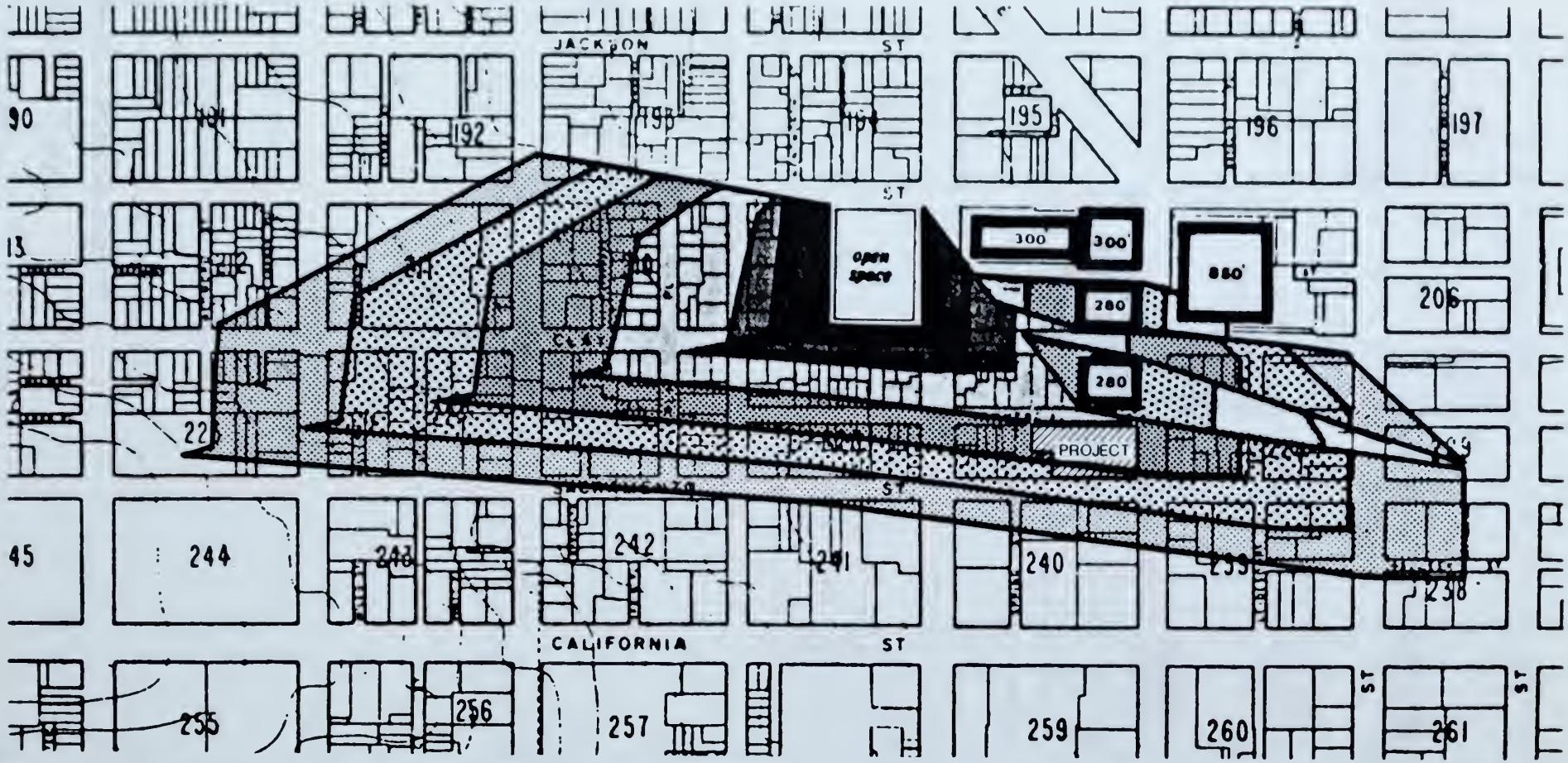
Project Site

Open Space

FIGURE 32

Project Shadow Pattern – June 21, 4:00 P.M.

SOURCE
Skidmore, Owings & Merrill, and Environmental Science Associates, Inc



CRITICAL TIME: 8:00 A.M. to 4:00 P.M. (Pacific Standard Time)
9:00 A.M. to 5:00 P.M. (Pacific Daylight Time)

CRITICAL MONTHS: March 21 to September 21

Buildings in conflict with Solar Fan

Project Site

OPEN SPACE

50 FEET

80 FEET

100 FEET

200 FEET

300 FEET

400 FEET

0 400
FEET

FIGURE 33

Portsmouth Square Solar Fan

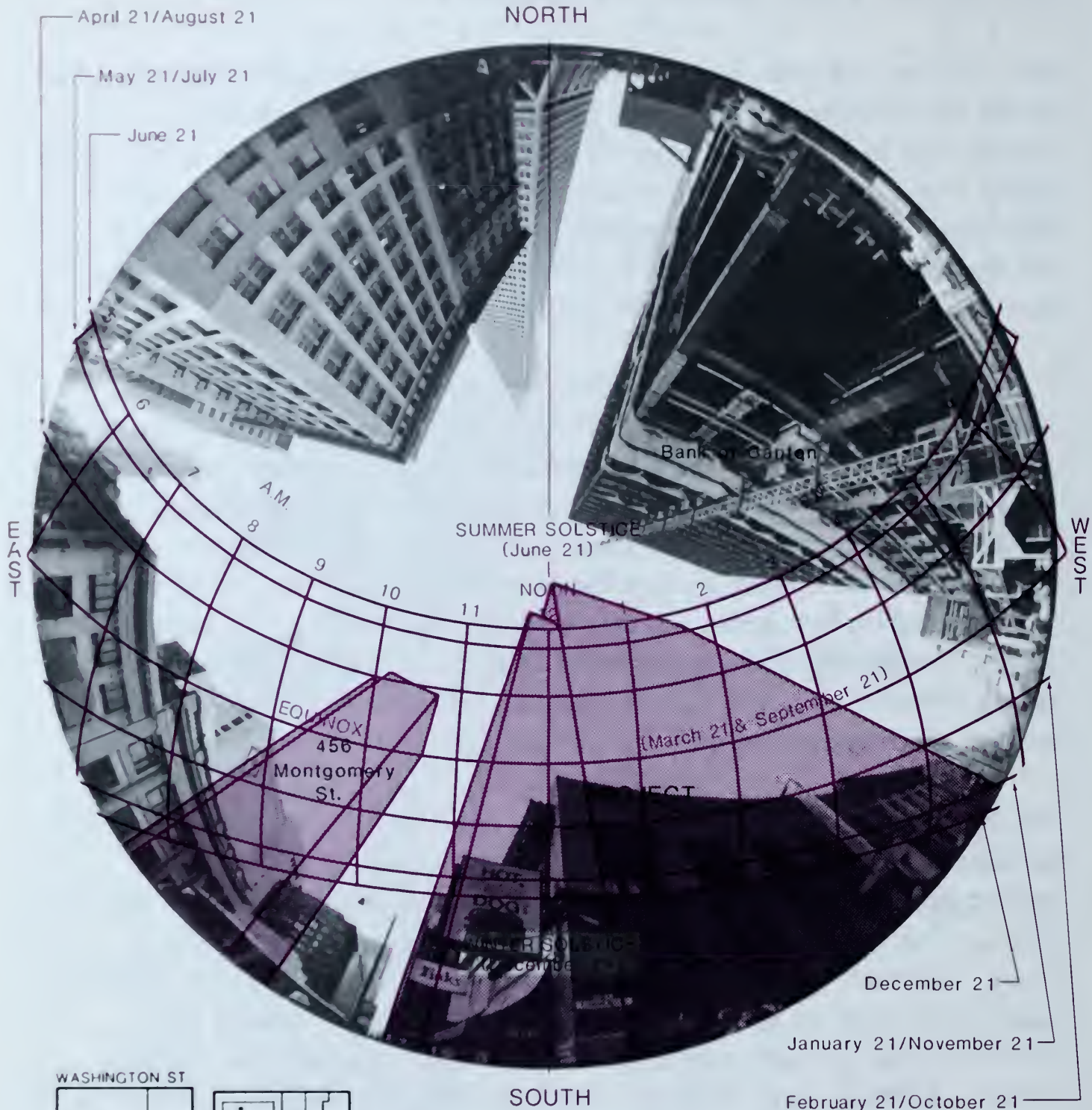
SOURCE:
"Sun and Light for Downtown San Francisco"

the 350-ft. project tower on Portsmouth Square after 8:00 a.m. (8:48 a.m. Daylight Time) between March 21 and September 21.

The solar fan indicates certain existing and under-construction buildings that exceed the solar fan height limits (see Figure 33, p. 84). Because of the shadows cast by these buildings, the diagram would permit higher height limits nearby (i.e., where buildings at such locations would be within existing buildings' shadow). The diagram does not include the under-construction, 456 Montgomery St. building, which exceeds the solar fan limit of 300 ft. on part of its site, southeast of the project site.

A sky exposure analysis of the project, for an exposure location at Commercial St. and Montgomery St., is shown in Figure 34, p. 86. This figure also shows the effects of the Bank of Canton and 456 Montgomery St., both under construction. During the summer, the project tower would shade this location on Commercial St. from about 11:45 a.m. to about 1:30 p.m. Project tower shadows would occur at this location from about 11:30 a.m. to about 3:15 p.m. during the spring and fall (one hour later in Pacific Daylight Time). The project tower shadow would last longer, until about 4:00 p.m. during February and 5 p.m. during October. During the late fall and early winter, existing buildings on and near the site would shade this location.

The Downtown Plan proposes sun access requirements for parks, open space and sidewalk areas. One such area is Portsmouth Square. Critical times for maintenance of existing sunlight on Portsmouth Square are defined in the plan as 8 a.m. to 4 p.m., Standard Time, March 21 to September 21 (9 a.m. to 5 p.m., Daylight Time, after late April). The project as proposed (350 ft.) would shade parts of Portsmouth Square in mornings until about 9 a.m. (Standard Time) in early spring and about 10 a.m. (Daylight Time) in late summer. A 250-ft.-tall structure complying with the plan would shade parts of the southerly portion of Portsmouth Square from about 8 a.m. to 8:30 a.m. (Standard Time) in early spring and from about 9 a.m. to 9:30 a.m. (Daylight Time) in late summer. In such a case, shadow analyses must cover effects on Portsmouth Square, and the decision-makers would consider project design in ralation to time, duration, and location of shadows. (See Section VII., Alternatives, p. 148, for a discussion of shadow effects of an alternative complying with the Downtown Plan.)



NOTE: Solar time from late April through late October would be one hour later due to Daylight Savings Time

SOURCE: Skidmore, Owings & Merrill, and Environmental Science Associates, Inc. (Base Photography)

FIGURE 34
Sun Path Analysis

The plan proposes to designate certain streets for mandatory sunlight access to sidewalks during midday hours. Kearny St., west of the site, is proposed as such a street, with sunlight access required on the east sidewalk from 11 a.m. (Standard Time), all year, and on the west sidewalk until 1 p.m., all year. The project would not add shade to Kearny St. sidewalks after 11 a.m. (Standard Time) at any time during the year.

WIND/4/

As noted in section III.C. Shadow and Wind, in San Francisco, the most frequent wind direction during most months is westerly (from the west). On an annual aggregate basis, west winds blow about half of the time. West winds are also the strongest, averaging over seven miles per hour (mph) year-round. Southwest winds are typically the second most frequent and second strongest winds. Northwest winds have the second highest average speed during some years.

Information on comfort of pedestrians under various conditions (e.g., sun exposure, cool and warm temperatures, light and heavy clothing, and various wind speeds) is provided by Lawson and Penwarden (1975). Penwarden (1973) suggests degrees of discomfort that are created by various wind speeds. For winds up to 4 mph, there is no pedestrian discomfort; for winds from 4 to 8 mph, wind is felt on the face. Winds from 8 to 13 mph will disturb hair, flap clothing, and extend a light flag mounted on a pole. Winds from 13 to 19 mph will raise dust, dry soil, and loose paper and will also disarrange hair. For winds from 19 to 26 mph, the force of the wind will be felt on the body. At 26 mph the limit of agreeable wind on land is defined. From 26 to 34 mph winds, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 34 mph increase difficulty with balance and gusts can blow people over. In view of the above information, a mean windspeed of 11 mph was selected as the comfort criterion and 25 mph as a hazard criterion.

Experiments to determine project-generated wind effects were performed for three prevailing wind directions (westerly, southwesterly and northwesterly) for the project and for alternatives. (Wind effects of alternatives are

described in Section VII., Alternatives, pp. 146-156.) These wind directions are the most common in San Francisco, and are therefore the most representative for evaluation purposes. In the wind tunnel, all hot-wire measurements were taken at the same series of surface points around the building site for all three wind directions. (See Appendix E, p. A-53.) The measured wind-tunnel wind speeds (ground level) are presented as mph in this report; thus, a wind speed given as 11 represents 11 mph, which corresponds to the comfort criterion. Hazard wind speeds were not encountered during the course of the study. The comfort criterion of 11 mph was exceeded, for existing and projected northwest wind conditions (which occur about 8% of the time) only at one location, the southwest corner of the base of the Transamerica Pyramid.

West Winds

For west winds, the existing near-surface wind speeds at all measured locations are below 8 mph and a majority of locations have wind speeds less than 5 mph. The highest existing west wind is on the eastern portion of Commercial St. adjacent to the project site, where wind speeds of 7.7 mph were recorded. Wind speeds of of 7.1 mph on Clay St. between Kearny and Montgomery Sts. and 7.1 mph near the intersection of Montgomery and Clay Sts. were recorded. The project would increase west wind speeds on Commercial St. between the project and the Bank of Canton Headquarters, from the existing 5.1 to 9.2 mph. Wind speeds would increase from the existing 4.3 to 7.7 mph on Sacramento St. west of Montgomery St. Wind speeds would also increase along Montgomery St., from the existing 3.9 mph to 6.2 mph near Clay St. and from the existing 3.2 mph to 5.9 mph near Sacramento St. No wind speeds would exceed the 11 mph pedestrian comfort criterion.

Southwest Winds

Current southwest wind flows all are less than 9 mph near the site, with a majority of winds less than 6 mph. The highest existing southwest wind speed recorded was 8.8 mph on Clay St. Changes in wind speeds due to the project would be less than 2.4 mph at all locations recorded; some wind speeds would be reduced by up to 1.4 mph. No wind speeds would exceed the 11 mph comfort

criterion, although Clay St. between Montgomery and Kearny would experience an increase of 1.4 mph, from the existing 8.8 mph to 10.2 mph. These results appear to be due to the presence of large high-rise buildings, including the Bank of America headquarters, almost directly upwind of the building site, which reduces surface winds.

Northwest Winds

Existing pedestrian level northwest wind speeds range from 2.6 to 12.2 mph, the latter at the northeast corner of Montgomery and Clay Sts. (at the base of the Transamerica Pyramid). The majority of existing winds are below 7 mph. The project would increase northwest wind speeds at locations surrounding the site. There would be an increase from the existing 6.9 mph on Sacramento St. south of the site to 10.6 mph. Wind speeds on the south side of the Commercial/Montgomery Sts. intersection would increase from the existing 4.1 mph to 10.2 mph. At the northeast corner of the Montgomery and Clay Sts. intersection the project would reduce the speed from the existing 12.2 mph to 11.7 mph. This would be the only wind speed with the project that would exceed the 11 mph pedestrian comfort criterion.

NOTES - Shadow and Wind

/1/ The computer graphics are available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister St., 5th Floor, San Francisco.

/2/ Observations at Portsmouth Square were carried out by Environmental Science Associates, Inc., on April 7, 8 and 16, 1983, from 8 a.m. to 4 p.m. The data are available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister St., 5th Floor, San Francisco.

/3/ Peter Bosselmann, "Sun and Light for Downtown San Francisco," Environmental Simulation Laboratory, University of California, Berkeley, April 1983.

/4/ This section is based upon a report entitled "Wind-Tunnel Studies of the 505 Montgomery Street Building", April 1983, prepared by Bruce White, Ph.D., as a subconsultant to Environmental Science Associates, Inc. and correspondence from Dr. White, dated September 3, 1983. Dr. White's information is available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister St., 5th Floor, San Francisco.

E. TRANSPORTATION, CIRCULATION AND PARKING

DEMOLITION, EXCAVATION, AND CONSTRUCTION TRAFFIC/1/

During the estimated 19-month construction period, transportation impacts would result from truck movements to and from the site during demolition, excavation, and construction activity. Demolition activity would require about six weeks and would generate an average of 20 truck movements per day in or out of the project site, between 9:00 a.m. and 4:00 p.m. Excavation would require 12 weeks and would generate an average of 20 truck movements per day in or out of the project site, between 9:00 a.m. and 4:00 p.m. Trucks would use Clay St. to reach the Embarcadero Freeway and would haul debris and excavation materials to a disposal site in South San Francisco. Construction activities (steel erection and finishing) would generate an average of 20 and a maximum of 60 truck movements per day during the 13-month period. Deliveries of materials would be distributed over the work day.

Construction truck access to the site is proposed from Sacramento St. or Commercial St. During the entire 19-month construction period, the approximately 120-ft. sidewalk on the north side of Sacramento St. would be closed; the curb lane would also be closed to provide a pedestrian detour. About half of the width of the Montgomery St. sidewalk along the project frontage would be closed during finishing activity. The adjacent curb lane on Montgomery St. would not be disrupted. The Commercial St. sidewalk along the project frontage would also be closed. Lane and sidewalk closures are subject to Department of Public Works and Muni review. Materials storage is proposed to be off-site, and would generate construction vehicle trips to the site. Temporary parking demand by construction workers' vehicles, and impacts on local intersections from construction worker traffic, would occur in proportion to the number of construction workers who would use automobiles.

The temporary closure of one traffic lane and sidewalk on Sacramento St. and of half the sidewalk on Montgomery St. would require temporary relocation of the Muni bus stops at those locations. The Sacramento St. stop would probably be moved from the west side to the east side of the Montgomery St.

intersection. The Montgomery St. stop (which was temporarily displaced from its original location by construction of the Bank of Canton Building) would probably be moved back (north) to its original location if construction of the Bank of Canton were completed in time or, if that building were still under construction, to the south side of the Sacramento St. intersection./2/

The impact of construction truck traffic would be a slight lessening of the capacities of access streets and haul routes because of the slower movements and larger turning radii of trucks. Any truck traffic from 7:00 a.m. to 9:00 a.m. or from 4:00 p.m. to 6:00 p.m. would coincide with peak-hour traffic, particularly at freeway access points. Lane blockage on Clay St. by queued trucks, if it were to occur, would reduce the capacity of this street. Blockage during times of peak traffic flow would have greater potential to create conflicts than during non-peak hours because of the greater peak-hour interaction between vehicles in adjacent lanes and vehicles moving around the queued trucks.

The Bank of Canton, 456 Montgomery St., 550 Kearny St., and 655 Montgomery St. (Washington/Montgomery Building), are currently under construction near the project site; the latter two buildings will probably be completed prior to the beginning of project construction. 580 California St. has been approved and is under construction.

Concurrent construction activities at the project site and at nearby sites would disrupt traffic and pedestrian flows by causing multiple lane closures, sidewalk closures, and street excavation. Each lane closure on Sacramento and Montgomery Sts. would reduce the affected street's capacity by about 33%. Because of varying construction schedules, however, the effect of construction at any one time would be lessened. Interior finishing work is being completed at 655 Montgomery St. Exterior finishing for the Bank of Canton is in progress, and the foundation work for 456 Montgomery St. is expected to start in late 1983. By the time demolition would start at the project site, the two buildings still under construction should be at stages that usually do not generate truck traffic that would compound the effects of the project.

Closing the curb lane on the north side of Sacramento St. (normally three lanes) for construction of the project would require rerouting of pedestrians and traffic along that street.

TRAVEL DEMAND ANALYSIS

Project Travel

The estimated amount of travel associated with the proposed project has been forecast through an aggregate travel demand modeling process as specified by the Department of City Planning./3/. Work- and non-work-related travel from the project was distributed to available transportation modes (auto, transit, etc.) by use of modal split data specified by the Department of City Planning./3/

The project would generate about 4,720 new person trip-ends (pte) per weekday./4/ The peak hour of project generation was assumed to occur during the peak period of 4:00 to 6:00 p.m. on weekdays. The project would generate about 760 pte during the two-hour peak period; peak-hour travel from the project would be about 490 pte.

Cumulative Travel

A total of 20.8 million gross sq. ft. of new office space in the Downtown is under formal review, approved, under construction, or completed but not fully occupied. Appendix C, Table C-2, p. A-29 shows the projects included in the cumulative analysis. About 1.9 million gross sq. ft. of existing office space would be replaced by proposed development, resulting in about 18.9 million gross sq. ft. of net new office space. Approximately 0.6 million gross sq. ft. of net new retail space would be developed in conjunction with the 18.9 million gross sq. ft. of net new office space (see Table C-2). This growth (both office and retail) would generate about 68,700 pte during the weekday p.m. peak period, of which about 44,500 pte would occur during the weekday p.m. peak hour.

Peak-period and peak-hour travel, by mode, for the project and cumulative development in downtown are shown in Table 5, p. 93. Modal assignments were

TABLE 5: PROJECTED P.M. PEAK-PERIOD AND PEAK-HOUR PERSON TRIP ENDS BY TRAVEL MODE

Modal Type	Projects Under Construction, Approved or Under Formal Review/a/		505 Montgomery Project		Total	
	Peak Hour	Peak Period	Peak Hour	Peak Period	Peak Hour	Peak Period
Automobile	7,950	12,300	110	170	8,060	12,470
Muni	11,970	18,530	170	260	12,140	18,790
BART	9,110	14,120	130	210	9,240	14,330
AC	2,450	3,800	40	60	2,490	3,860
SamTrans	450	700	10	10	460	710
SPRR	650	1,000	10	20	660	1,020
GGT	1,540	2,380	20	30	1,560	2,410
Ferry	460	710	10	10	470	720
Other (Walk)	9,500	14,400	- 20 /b/	- 20 /b/	9,490	14,390
TOTALS/c/	44,080	67,940	490	760	44,570	68,700

/a/ Individual projects are listed in Appendix C, Table C-2, p. A-29.
/b/ The reduction in the amount of retail on the project site from the existing condition would create a net reduction in the amount of peak period primary pedestrian travel at the site.
/c/ Rounded, including individual entries.

NOTE: The peak hour occurs during the two-hour peak period of 4:00-6:00 p.m.

SOURCE: Environmental Science Associates, Inc.

made on the assumption of existing travel patterns (i.e., no modal shift). The bridge and freeway system serving the City is currently near capacity during peak hours, so the present proportion of persons traveling by single-occupant automobile might be expected to decrease in the future. Much of the City-wide peak-hour increase in travel might be accommodated by a shift from single-occupant automobile to ridesharing or public transit.

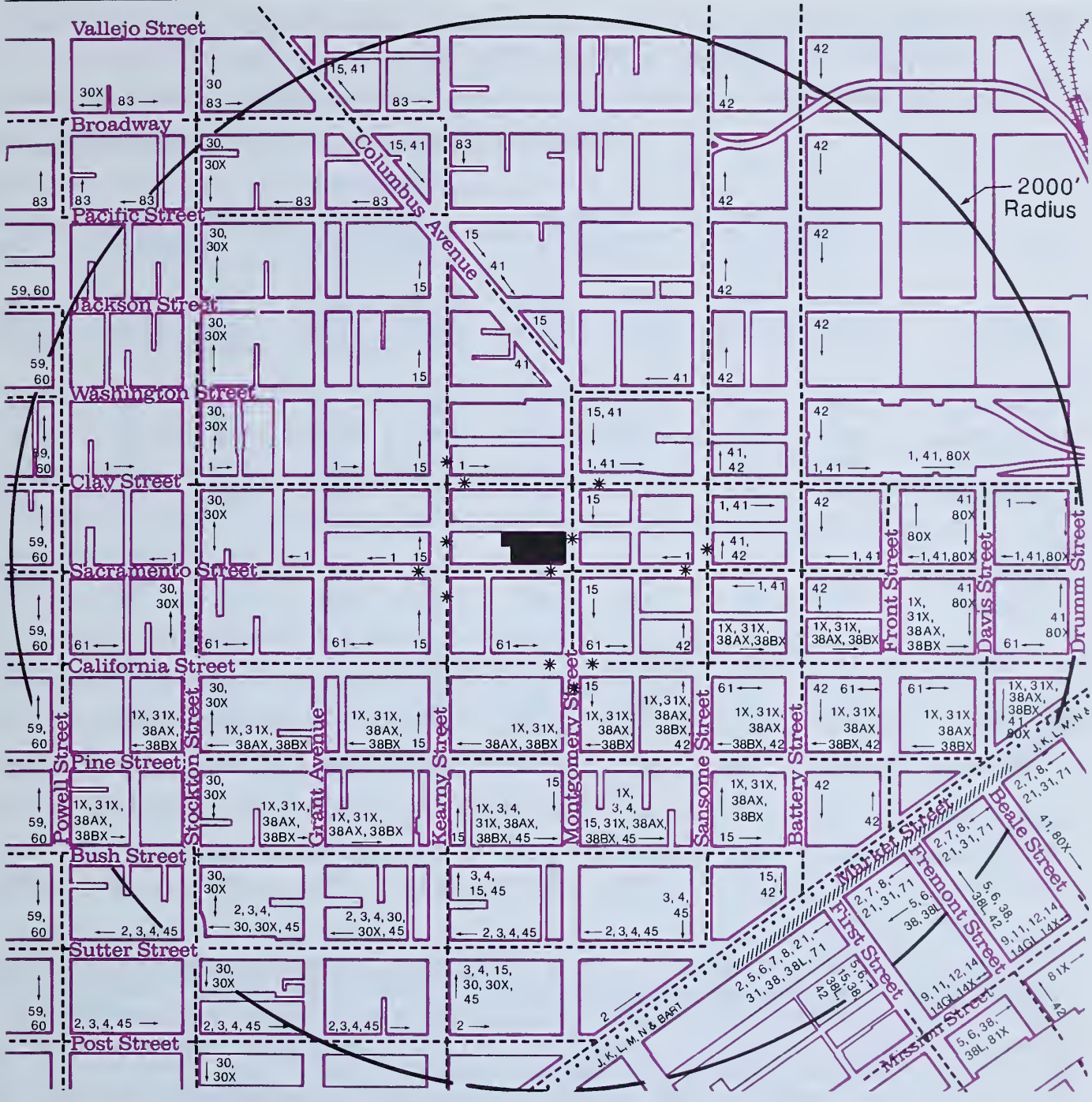
In this and other San Francisco EIRs, a land use approach was used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate approach is to forecast travel demand based upon regional projections of employment share (employment trend approach)./5/ Appendix D, pp. A-43 - A-46, contains a discussion of the two approaches.

TRANSIT IMPACTS

An analysis was made of the cumulative transit impacts of development in downtown San Francisco as set forth in the Department of City Planning Guidelines. The analysis was conducted on a system level that considered the lines or blocks of lines that serve the downtown area, and not the entire transit system. (Muni and BART routes in the project vicinity are shown on Figure 35, p. 95.) As a worst case, this analysis assumes no expansion in the transit system and the results are not dependent on increased City, State or Federal funding. If existing City, State, or Federal funding were to decrease, operating conditions on the Muni and other carriers would be expected to deteriorate. Conversely, if City, State or Federal funding were to increase over existing levels, operating conditions would be expected to improve.

The results of the transit analysis are shown in Table 6, p. 96. The future-without-project condition includes the 18.9 million gross sq. ft. of net new cumulative office development and the 0.6 million gross sq. ft. of net new retail development. Ridership from the project and percent of capacity used based upon existing capacity are also shown in Table 6. As all of the transit agencies have five-year plans for improving service, percent of capacity used based upon capacity proposed to occur in the current five-year plan cycle (1983-1988) for each transit agency is also shown in Table 6. Existing transit ridership and capacities are shown in Appendix D, Table D-1, p. A-40. Proposed capacities are also shown in Table D-1, and discussed in Appendix D, p. A-39.

The project would generate about 260 p.m. peak-period Muni trips of which 170 would occur in the peak hour (see Table 5, p. 93). The increases generated by the project during both the p.m. peak period and the p.m. peak-hour would be about 2% of the increase in demand from cumulative development demand in downtown San Francisco (projects included in the cumulative demand calculation are listed in Appendix C, Table C-2, p. A-29).



J, K, L, M, N & BART — BART and Muni Metro Station

BART Route

Muni Metro Subway Route

Transit Route

1, 2, 3, J, K, L — Route Designations

Route Direction

* Bus Stop

PROJECT SITE

0 500
FEET

FIGURE 35

Muni and BART Routes in Project Area

SOURCE:
San Francisco Municipal Railway Map, January 1982

TABLE 6: PERCENT OF TRANSIT CAPACITY USED DURING THE P.M. PEAK PERIOD AND THE P.M. PEAK HOUR ON OUTBOUND TRANSIT LINES /a/

			Future w/o Project/b/				Future with Project			
	Existing (1983)		Existing Capacity		1988-1990 Proposed Capacity/c/		Existing Capacity		1988-1990 Proposed Capacity/c	
Agency	Peak Hour	Peak Period	Peak Hour	Peak Period	Peak Hour	Peak Period	Peak Hour	Peak Period	Peak Hour	Peak Period
Muni/d/										
Northeast	79	73	103	91	83	74	105	92	84	75
Northwest	88	80	152	134	134	118	152	134	134	118
Southwest	80	73	109	96	96	85	109	96	97	85
Southeast	79	70	115	98	95	81	116	99	96	82
BART										
Transbay	94	88	133	125	81	77	133	125	82	77
Westbay	89	67	113	85	72	54	114	85	72	54
AC Transit	71	70	90	89	89	89	90	89	90	89
SamTrans	78	78	98	99	34	35	98	99	34	35
CalTrain	61	59	74	77	61	63	74	77	61	63
Golden Gate										
Motor Coach	70	68	92	89	74	71	93	89	74	72
Ferry	39	33	59	58	43	45	59	58	43	45

/a/ Transit loadings expressed as the percent of existing (recommended) maximum capacity used. Recommended maximum capacity is less than "crush" loadings that occur occasionally. For bus lines, 1.26 to 1.50 times seated capacity is defined as Level of Service (LOS) E, Scheduled Load; 1.51 to 1.60 times seated capacity is defined as LOS F, Crush Load (Transportation Research Board, January 1980, Circular No. 212, p. 74). Thus, percentages from 84% to 100% for bus lines in the Table above represent LOS E conditions; percentages greater than 100% represent LOS F conditions. Table D-1, p. A-40, shows existing riderships and capacities.

/b/ The Future (without project) condition is existing condition plus condition that would be generated by the 18.9 million gross sq. ft. of net new office development and the 0.6 million sq. ft. of net new retail development in the downtown (see Appendix C p. A-29). Peak-period percent of capacity used may be higher than peak-hour percentages because of differences of distribution of capacity over the peak period.

/c/ Percent of proposed capacity used where proposed capacity is as specified by each agency's Five-Year Plan for 1983-1988 (see Table D-1, p. A-40).

/d/ 1983 Muni ridership is approximate, based on a compilation of Muni ridership by the Department of City Planning. See footnote /b/ of Table D-1, p. A-40, for the lines comprising each of the four Muni corridors.

SOURCE: Environmental Science Associates, Inc.; Department of City Planning.

Under the future-without-project condition, demand on most of the affected Muni lines would exceed existing (1983) capacity. This would also be the case for BART Transbay. These conditions are indicated in Table 6, p. 96, where more than 100% of capacity is shown. Addition of the project ridership to the existing-plus-cumulative ridership would not, of itself, cause any of the other agencies' routes to exceed capacity and, in general, would use less than 1% of existing capacities.

As cumulative demand increases, the length of time of peak loadings would increase, spreading peak-of-the-peak conditions over time. As shown in Table 6, p. 96, peak period loading would exceed total capacity in the Muni northwest corridor and on BART Transbay. All other peak-period loadings, although exceeding peak-hour capacities, would be served by existing peak period capacities.

If existing funding continues and proposed expansion occurs, the future operating conditions on the transit agencies would be as shown in Table 6, p. 96, under the Proposed Capacity columns. Average future loadings on Muni would be within total future capacity in both the peak-hour and the peak period, both with and without the addition of the project ridership, with the exception of the Muni northwest corridor, which would exceed future peak period capacity by about 20%, and peak-hour capacity by about 30%. While corridor volume-to-capacity is 100% or less, crowding on individual lines is more severe with capacities approached or exceeded. Although system-wide or corridor analysis may suggest that capacity is sufficient for projected demand, certain lines would continue to experience excess demand in the peak period. Average future loadings on BART Transbay and Westbay, SamTrans, Southern Pacific (CalTrain), and Golden Gate Transit would be within future capacity during both the peak hour and the peak period, both with and without the addition of project ridership. AC Transit does not propose any increases in transbay service and would, therefore, be operating with existing capacity; loadings would increase but would not exceed AC Transit's recommended maximum capacity both under existing-plus-cumulative conditions, and after addition of the project demand.

PEDESTRIAN MOVEMENTS

The primary pedestrian entrance to the project would be on Montgomery St. and would provide access to the project lobby and elevators serving the upper-floor offices. Entrances to the ground floor retail space would be located on Montgomery, Sacramento, and Commercial Sts. The project would generate about 200 pedestrian pte during the noon 15-minute period and about 140 pedestrian pte during the p.m. peak 15-minute period.

Operating conditions on sidewalks and crosswalks have been categorized into a Pedestrian Flow Regimen, which relates density of pedestrians in a specific time period (pedestrians per foot of clear sidewalk width per minute) to descriptors of quality of pedestrian flow (the difficulty of maintaining walking paths and speeds on a sidewalk)./6/ Table D-2, p. A-41 shows the relationships between flow rates, walking speed, path choice, and interactions between pedestrians for each flow regime. Figure D-2, pp. A-51 - A-52, shows photographs of sidewalk conditions for each flow regime. Typically, an upper limit for desirable conditions is 14 pedestrians per foot per minute (p/f/m), defined as crowded, although conditions as high as 18 p/f/m, a congested condition, are possible with some conflicts among pedestrians./6/

The Sacramento and Montgomery St. sidewalks currently operate in impeded conditions during the noon 15-minute period, and in unimpeded conditions during the 15-minute p.m. period (see Table 7, p. 99)./7/ The crosswalk across Montgomery St. operates in impeded conditions during the noon period and in unimpeded conditions during the p.m. period. The crosswalk across Sacramento operates in impeded conditions during both the noon and p.m. periods.

During the noon and p.m. peak hours, pedestrian traffic from the project would increase pedestrian flows by about 0.5 p/f/m on the Sacramento St. sidewalk and by about 1.0 p/f/m on the Montgomery St. sidewalk. This increase in pedestrian traffic in the area might increase the number of pedestrians crossing Montgomery St. at the intersection with Commercial St., where there are no marked crosswalks. Such crossings would increase the potential for vehicle-pedestrian accidents.

TABLE 7: PEAK PEDESTRIAN VOLUMES AND FLOW REGIMEN (PROJECT SIDE OF STREET)

	Existing		Existing & Cumulative/a/		Existing & Cumulative & Project	
	Pedestrians/ Foot/Minute (p/f/m)	Flow Regimen/b/	p/f/m	Flow Regimen	p/f/m	Flow Regimen
		NOON PEAK /c/				
Sacramento St. Sidewalk/d/	2.5	Impeded	2.8	Impeded	3.3	Impeded
Montgomery St. Sidewalk	2.1	Impeded	3.8	Impeded	5.3	Impeded
Montgomery St. Crosswalk	2.7	Impeded	3.2	Impeded	3.8	Impeded
Sacramento St. Crosswalk	3.7	Impeded	5.4	Impeded	6.4	Constrained
		P.M. PEAK /c/				
Sacramento St. Sidewalk/d/	1.7	Unimpeded	2.0	Unimpeded	2.3	Impeded
Montgomery St. Sidewalk	1.7	Unimpeded	3.4	Impeded	4.4	Impeded
Montgomery St. Crosswalk	1.7	Unimpeded	2.2	Impeded	2.6	Impeded
Sacramento St. Crosswalk	2.5	Impeded	4.1	Impeded	4.8	Impeded

/a/ Cumulative development includes Bank of Canton, 655 Montgomery St., 550 Kearny St., and 580 California St.
/b/ See Appendix D, Table D-2, p. A-41, for description of pedestrian flow regimens.
/c/ Peak 15-minute periods.
/d/ All sidewalk segments and crosswalks are along project frontage.

SOURCE: Environmental Science Associates, Inc.

Other development under construction, approved, or under formal review by the City would also increase pedestrian activity on the sidewalks adjacent to the project site. Increases in pedestrian traffic from projected cumulative development, including buildings under construction (e.g., Bank of Canton, 655 Montgomery St., 456 Montgomery St., 550 Kearny St., 580 California St.), would increase pedestrian flows during both the noon and p.m. peak hour by 0.3 p/f/m on the Sacramento St. sidewalk and by 1.7 p/f/m on the Montgomery St. sidewalk.

Sidewalk operations after the addition of cumulative-development pedestrians would be in the impeded range during both the noon hour and the p.m. peak hour, except for the Sacramento St. sidewalk, at the upper limit of unimpeded during the p.m. peak hour (see Table 7, p. 99). Addition of project pedestrian traffic would cause an increase in pedestrian volumes on the Sacramento St. sidewalk during the noon hour and the p.m. peak hour. This would not alter the impeded conditions at noon, but would change future conditions from unimpeded to impeded during the p.m. peak. Increased pedestrian flows from the project would worsen the operation on the Montgomery St. sidewalk to the upper range of impeded flow during the noon hour and would be in the middle of the impeded range during the p.m. peak hour; the flow regimen for future conditions on the Montgomery St. sidewalk would not change due to the project.

Pedestrian traffic from cumulative development (without the project) would cause the crosswalks at the intersection of Sacramento and Montgomery Sts. to operate in the higher ranges of impeded conditions during the noon hour. During the p.m. peak hour, cumulative-development pedestrians would cause the crosswalks to operate in the middle range of impeded conditions. Addition of project pedestrian traffic would increase overall flows from the existing-plus-cumulative 5.4 p/f/m to 6.4 p/f/m in the crosswalk crossing Sacramento St. during the noon hour, changing the operation from the upper range of impeded flow to the lower range of constrained flow. During the p.m. peak hour, cumulative-plus-project pedestrian flows across Sacramento St. would remain in the range of impeded flow. Addition of the project pedestrian flow to the Montgomery St. crosswalk would increase overall flow during the noon hour and during the p.m. peak hour, but would not change the level of operation (impeded).

TRAFFIC

A capacity analysis of the two major intersections adjoining the project block indicates that the Montgomery / Sacramento Sts. and Montgomery / Clay Sts. intersections are operating at vehicular Level of Service C (stable flow, acceptable delay) during the p.m. peak hour (and the p.m. peak period). (See Appendix D, Table D-3, p. A-44 for definitions and volume/capacity ratios for each Level of Service, and Table 8, below, for the peak-hour volume/capacity ratios.) The intersection at Clay and Front Sts. operates at Level of Service B (stable flow, slight delay) during p.m. peak hour, and the intersection at the Washington and Battery Sts. ramp operates at Level of Service B during the a.m. peak hour.

TABLE 8: PROJECTED PEAK-HOUR INTERSECTION VOLUME-TO-CAPACITY (V/C) RATIOS AND LEVELS OF SERVICE (LOS) NEAR THE PROJECT SITE

	Existing (1982)		Future without Project/a/		Future with Project/a/	
Intersection	V/C	LOS/b/	V/C	LOS/b/	V/C	LOS/b/
Montgomery and Sacramento Streets (p.m.)	0.61	B	0.61	B	0.61	B
Montgomery and Clay Streets (p.m.)	0.71	C	0.71	C	0.72	C
Clay and Front Streets (p.m.)	0.65	B	0.83	D	0.83	D
Washington and Battery Streets (a.m.)	0.64	B	0.79	C	0.80	C

/a/ Future traffic is the sum of existing traffic and traffic that would be generated by the 18.9 million gross sq. ft. of net new office development and the 0.6 million gross sq. ft. of net new retail development that is proposed, approved, or under construction in the downtown (see Appendix C, p. A-29).
/b/ See Appendix D , Table D-3, p. A-44 for definition of Levels of Service. Based upon weekday manual intersection counts on March 22, 1983; July 21, 1981; November 16, 1982; and January 20, 1983.

SOURCE: Environmental Science Associates, Inc.

Project-generated traffic volume increases at freeway access points were projected with conventional traffic generation techniques. Traffic increases were based on numbers of on-site employees and visitors; it was assumed that as long as parking would be available within walking distance, most drivers would continue to drive to work. The streets that serve the project as feeders to or from freeway ramps (Clay and Washington Sts.) are points of maximum automobile traffic congestion in the Financial and Downtown Districts. Conditions on these streets were assumed to represent the "worst case" or greatest traffic impacts of the project.

Impacts from the project on other streets would be less, because project traffic on them would be more dispersed. Routes of drivers going to garages were assumed to be sufficiently dispersed so that they would have no measurable effect on traffic volumes on the streets adjacent to the project. Project impacts at the intersections closest to the project site would result primarily from service-vehicle and pedestrian traffic.

Traffic from cumulative development without the project, as shown in Table 8, p. 101, would cause the Level of Service to worsen from B to C at the intersection of Washington and Battery Sts. during the a.m. peak hour. Cumulative traffic without the project would cause the intersection of Clay and Front Sts. to deteriorate from Level of Service B to D during the p.m. peak hour. Cumulative traffic with or without the project would not change the Level of Service at the intersections of Montgomery / Sacramento Sts. and Montgomery / Clay Sts. during the p.m. peak hour. The impact of the project would be an imperceptible lessening of the Level of Service of traffic operation on the street system relative to existing-plus-cumulative conditions. An effect of increased delay at the freeway feeder intersections of Washington / Battery Sts. and Clay / Front Sts. would be a redistribution of travel patterns to less-traveled routes and, potentially, a shift from single-occupant automobiles to public transit, carpools, jitneys, and bicycles.

PARKING

A survey of existing commercially available off-street parking within walking distance (one-quarter mile, or 1,320 ft.) of the project site was conducted./8/ In this area, there are a total of about 6,800 commercially

available off-street spaces, of which 170 were found to be vacant on a daily basis at the time the survey was conducted, for an average occupancy of about 98%. (An occupancy of about 90% can be considered the functional capacity of a single parking facility.) Of these 6,800 spaces, 123 are located in the Savoy Garage (Columbus and Pacific Sts.), which is proposed for a project with about 100 spaces.

On-street parking on the block faces fronting the project site includes commercial loading zones and bus stops on Sacramento St. and Montgomery St.; and metered spaces, metered loading zones, and loading zones on the south side of Commercial St. No parking is permitted on the north side of Commercial St. Daytime observations indicate a high usage of the metered spaces and loading zones, with a moderate turnover of vehicles. (Along the project frontage, the south side of Commercial is temporarily posted no-parking because of Bank of Canton construction.)/9/

By use of the methodology described in Appendix D, p. A-41, cumulative long-term parking demand for the 18.9 million gross sq. ft. of net new office development and the 0.6 million gross sq. ft. of net new retail development proposed in the greater downtown area is projected to be about 18,600 spaces. The project would create a long-term parking demand of 210 spaces for a total increase in demand of about 18,800 long-term spaces. The project would cause about 1% of the total increase in long-term demand in the downtown. The short-term parking demand from the cumulative office and retail development would be about 3,000 spaces. The project would add demand for 30 spaces for a total short-term increase in demand of about 3,030 spaces. The project would cause about 1% of the total increase in short-term demand. The total increase in parking demand (long and short-term) would be 21,900 spaces, of which the project would cause about 1%.

A survey by the Department of City Planning shows that there are about 40,000 off-street parking spaces in the C-3 district and an additional 6,500 spaces in the area bounded by The Embarcadero, and Folsom, Eighth, and Bryant Sts./8/ On the basis of average occupancy, about 4,100 spaces are available on a daily basis. Cumulative projects under formal review, approved, or under construction would add about 3,000 net new parking spaces in the downtown area. The cumulative demand for the whole downtown area, including the

project, would create a theoretical net deficit of about 14,800 spaces. The project would provide 23 on-site parking spaces and would not remove any existing spaces. The proposed parking spaces would be located in the basement level, with access from Sacramento St. via a 12-foot-wide one-way, signal-controlled ramp.

The deficit may be less than this projection because the parking survey did not inventory parking in areas west of Eighth St., south of Bryant St., or north of Washington St. (all of which contain projects that are included in the cumulative analysis).

Parking demand projections are based upon existing travel patterns and are not dependent upon the availability of parking spaces or upon the ability of the freeway and bridge system to carry the additional travel. Freeway and bridge capacity into downtown San Francisco is essentially fixed at existing levels because major construction would be required to add new capacity. Therefore, the net deficit of 14,400 spaces does not mean that 14,400 autos would be driving on City streets in search of parking. Rather, the travel demand represented by the parking deficit would most likely shift to ridesharing or transit. Increased ridesharing would not only reduce parking demand but would also reduce traffic impacts from the worst-case impacts shown in Table 8, p. 101. Increased transit use would add to the demands on the regional and local transit systems, particularly Muni.

An alternative approach to calculating the short-term parking deficit is to project the short-term parking demand that might be expected to compete for the parking in the project area. Not all of the cumulative 3,030-space short-term demand would be expected to compete for parking in the project area because not all of the cumulative development would be located near the project. The assumption that short-term parkers would attempt to park within a five-minute walk of their destinations (about one-quarter mile, or 1,320 ft.) was used to define the area that would be affected by the project's short-term parking demand.

Cumulative short-term parking demand from buildings proposed and under construction near the project is projected to be 260 spaces. The cumulative short-term demand, including the project, of 290 spaces would create a

theoretical deficit of 100 spaces in the area within one-quarter mile of the project site (see p. 102 for discussion of parking in this area).

City policy, as stated in the Transportation Element of the Master Plan, is to "encourage short-term use of existing parking facilities within and adjacent to the downtown core by converting all-day commuter parking to short-term parking in areas of high demand, or to car/vanpool parking where short-term parking demands are low."/10/ Accordingly, about 14,000 existing off-street spaces in the C-3-O district could be converted to short-term-only parking, if the City enacted such legislation.

Imbalances in long-term parking demand and potential supply, given projected cumulative development and demand, would be expected to encourage the use of carpools and vanpools, the creation of satellite (intercept) parking facilities in outlying non-residential areas (with shuttle or expanded Muni service to the downtown area), and/or the increased use of transit for commuters from San Francisco or suburban centers (East Bay, North Bay, Peninsula). Peninsula residents, for example, could find Southern Pacific commuter trains more attractive if they could get no closer to downtown by car than the train terminal at Fourth and Townsend Sts. All transit options would add riders on regional and local transit systems, particularly Muni.

TRANSPORTATION POLICIES OF THE MASTER PLAN

The project would relate to several objectives and policies of the Transportation Element of the San Francisco Master Plan./10/ General Objective 1, Policy 6 states "develop a financing system for transportation in which funds may be allocated without unnecessary restriction for priority improvements according to established policies." The project sponsor has agreed to participate in legally adopted funding measures for Downtown transit funding, proportional to demand created by the project. Policy 7, "seek means to reduce peak travel demand," would relate to project plans for a transportation broker to encourage "flex-time," transit and carpools and vanpools. Downtown Transportation Plan Objective 1, Policy 2, "provide additional short term parking facilities in peripheral locations around but not within the downtown core," and Policy 3, "discourage the addition of new long-term parking spaces in and around downtown," would conflict with project

plans to provide 23 parking spaces on the site. The project would respond to Objective 2, Policy 2, "minimize obstruction to through pedestrian movement on sidewalks in the downtown core," by providing improvements on Commercial St. consistent with the Center City Pedestrian Circulation Study./11/

TRUCK DELIVERIES AND LOADING

Table 9, below, shows total service-vehicle travel and average hourly service-vehicle demand for the project, based upon data published in Center City Circulation Program: Pedestrian Circulation and Goods Movement./11/ The new building would generate about 70 service-vehicle stops per day. Average hourly loading space needs are given in terms of spaces per hour per 10,000 gross sq. ft. of building space; average demand for the project would be 3.5 spaces per hour and peak hourly demand would be 4.4 spaces.

Two loading spaces, one 35 ft. in length and one 25 ft., are proposed, to be located on the Sacramento St. side of the project with one 36-ft. wide curb cut, the maximum curb-cut width permitted./12/ Overhead height in the loading area would be at least 14 ft. 6 in. The curb cut would also serve the basement parking area. The parking level would be reached via a one-lane ramp. Traffic on the ramp would be controlled by a signal to be installed as part of the project.

TABLE 9: PROJECTED SERVICE-VEHICLE TRAVEL ATTRIBUTABLE TO THE PROJECT/a/

Use	Space (GSF)/b/	Daily Stops/ 10,000 sq.ft. of GSF/b/	Daily Stops	Spaces/Hour/ 10,000 sq.ft. of GSF/b/	Average Spaces/ Hour
Office	327,250	2.1	69	0.1	3.3
Retail	9,900	3.0	3	0.2	0.2
TOTALS			72		3.5

/a/ Service-vehicle travel has been included in total travel calculated for the project.
/b/ Gross square feet of floor space.

SOURCES: Environmental Science Associates, Inc.; Department of City Planning, 1980, Center City Circulation Program.

The City Planning Code (City and County of San Francisco, 1979) specifies in Section 152, Article 1.5 that the amount of floor area proposed for the project would require the provision of two off-street loading spaces; the project would comply with this requirement. City Planning Commission Resolution No. 9286 (January 21, 1982) states the intent of the Commission to require adequate off-street loading. The Resolution requires projects to provide, as mitigation, loading space in compliance with Exhibit A of the Resolution. (The criteria of that exhibit are based on the same calculations shown in Table 9.) This project would be required to provide, as mitigation, three off-street loading spaces, each 35 ft. in length./13/

The potential for pedestrian-vehicle conflicts would be increased by the service-vehicle traffic from the project crossing the Sacramento St. sidewalk. Pedestrian volumes on Sacramento St. are low, so the impact of the project service-vehicle traffic would not be as great as it would be in a more heavily traveled pedestrian area.

Analysis of the design of the proposed Sacramento St. loading/service area indicates that standard single-unit trucks would be able to enter the loading area by backing in from a westbound position on Sacramento St., as required by Department of Public Works standards. There would be insufficient maneuvering room to allow trucks to turn around on-site.

The service elevator in the loading area would connect with the office floors, and would be located in a separate utility core. Building directories and signs for the service elevators would be placed in the loading area. No access to the lobby or retail areas would be provided from the service elevator. Service vehicles for these areas would use the on-street loading zones on Montgomery St. Vehicles currently use the Montgomery St. commercial zones to serve the existing retail and office uses on-site. As a large portion of the existing retail uses would be replaced by the project, the existing number of on-street loading spaces on Montgomery St. should be sufficient to handle the demand from the project retail space as well as the existing uses that would remain.

The project would include on-site storage for trash containers. Containers would not be placed on streets or sidewalks except during actual trash pickup. The project would provide containers to collect and store recyclable solid wastes (such as glass, metal, computer cards, and newspaper) and the project sponsor would contract for recycling service.

NOTES - Transportation, Circulation and Parking

/1/ Construction data are from Theodore Smith, Dinwiddie Construction Co., letter, March 21, 1983, and telephone conversation, April 8, 1983.

/2/ Carl Natvig, Planning Division, Muni, telephone conversation, April 8, 1983.

/3/ The calculation methodology, regional travel distributions, office and retail trip generation rates, trip purpose and peak-hour and peak-period percentages are as specified in the "Guidelines for Environmental Impact Review: Transportation Impacts," Department of City Planning, September 1983. This document is incorporated by reference and is available for review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, Fifth Floor, San Francisco, CA.

/4/ 300,750 net new gross sq. ft. of office space X 0.0181 person trip-ends (pte) per day per net square foot - 4,780 net reduction in gross square feet of retail space X 0.15 pte per day per gross square foot = 4,720 pte per day. Trip generation rates are from the Guidelines (see Note 3).

/5/ The Department of City Planning, Office of Environmental Review (OER), issued a memorandum, July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in EIRs to give a balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each.

/6/ Pushkarev and Zupan, 1975, Urban Space for Pedestrians, Cambridge, Mass., p. 85-117

/7/ Pedestrian counts were conducted by Environmental Science Associates, Inc. on March 28, 1983.

/8/ The parking inventory data is from C-3 Districts Parking Update, Department of City Planning, December 16, 1982. The parking occupancy survey was conducted on November 5, 6, 7, 10, 13, and 17, 1980, and January 20-23 and 26, 1981 (all weekdays) between the hours of 10:00 a.m. to noon and 1:00 to 3:00 p.m. by TJKM, Transportation Consultants.

/9/ Observations at the project site were conducted by Environmental Science Associates on Tuesday, March 22, 1983.

/10/ San Francisco Department of City Planning, January 1983, Transportation, an Element of the Master Plan.

/11/ San Francisco Department of City Planning, 1980, Center City Circulation Program: Pedestrian Circulation and Goods Movement, Working Papers 1, 2 and 3, and Final Report.

/12/ City and County of San Francisco Department of Public Works, Order 62850, January 22, 1963, Standard Requirements for Automobile Driveways.

/13/ City and County of San Francisco, Exhibit A, Off-Street Freight Loading and Vehicle Space Requirement and Guidelines, January 1982, City Planning Commission Resolution No. 9286.

F. AIR QUALITY

Long-term air quality impacts associated with project operation would result primarily from increased vehicle emissions. Combustion of natural gas for space and water heating would also generate small amounts of pollutants (primarily nitrogen oxides) relative to those produced by traffic. Projected (1987) daily emissions of pollutants from project-generated traffic are shown in Table 10, p. 110, and compared with projected regional emissions.

Roadside carbon monoxide (CO) concentrations along streets carrying project-generated traffic were projected for worst-case conditions (poor dispersion meteorology), and are compared with the ambient standards in Table 11, p. 110. The largest increases due to the project (over cumulative levels), about 0.2 parts per million (ppm), would occur on Clay St. No excesses of the applicable CO standards are projected on any street under any of the future scenarios. The projected effects of state and federal emission controls on new vehicles (and the retirement of older, polluting vehicles) would more than offset the growth in emissions due to increased traffic volumes.

CO concentrations within the project's parking garage would be maintained within standards by a ventilation system controlled by CO monitors.

TABLE 10: PROJECTED 1987 DAILY PROJECT-GENERATED EMISSIONS

Pollutant	Emissions/a/ in tons per day		
	Project	Cumulative/b/	Region
Carbon Monoxide	0.18	16.5	2340
Hydrocarbons	0.02	1.5	515
Nitrogen Oxides	0.02	1.9	543
Sulfur Oxides	negligible	0.2	182
Particulates	0.03	2.3	536

/a/ Project and Cumulative emissions calculated using BAAQMD, 1981, Vehicle Emission Factors Update, EMFAC6C. Emissions of CO, HC, and NO_x include an assumed three minutes of idling time per vehicle trip. Particulate emissions include dust entrained from paved roadway surfaces. Regional emissions from ABAG, BAAQMD, MTC, 1982, 1982 Bay Area Air Quality Plan, p. 53. The region is the nine-County BAAQMD.
/b/ Cumulative development based on Appendix C, Table C-2, p. A-29.

SOURCE: Environmental Science Associates, Inc.

TABLE 11: PROJECTED WORST-CASE ROADSIDE CARBON MONOXIDE IMPACTS

Roadway	Averaging Time	Concentration (ppm)/a/		
		Existing 1983	1987 Base Case/b/	1987 Base & Project
Washington (between Battery and Freeway)	1-hr	17.7	16.9	17.0
	8-hr	8.5	7.4	7.5
Clay (between Battery and Freeway)	1-hr	16.3	15.8	16.0
	8-hr	9.0	7.8	7.9

/a/ Calculations were made for worst-case (poor-dispersion) meteorology. Background concentrations were assumed to be 9.9 ppm for one hour and 6.2 ppm for eight hours in 1983, and 8.4 ppm for one hour and 5.2 ppm for eight hours in 1987, based on the average of the annual second-highest concentrations for the past three years and adjusted for future years according to emission projections.
/b/ Cumulative development based on Appendix C, Table C-2, p. A-29.
NOTE: Applicable standards, 20 ppm for one hour and nine ppm for eight hours, would not be exceeded.

SOURCE: Environmental Science Associates, Inc., using BAAQMD, 1975, Guidelines for Air Quality Impact Analysis of Projects, updated for 1981 emission factor revisions.

The 1982 Bay Area Air Quality Plan found that ozone would continue to be a regional problem in the future, and that CO and TSP would continue to be problems on a local scale (although not in San Francisco), unless additional pollution control strategies were adopted. The project would not directly conflict with those strategies, and by itself would have no measurable impact on citywide or regional concentrations, or the frequency of standard violations. However, it could incrementally impede the objectives of the Plan by generating additional pollutant emissions in San Francisco and elsewhere in the air basin. In conjunction with cumulative development, it could increase ambient ozone concentrations and/or standards violations.

G. CONSTRUCTION NOISE

The noise environment of the project site is dominated by vehicular traffic, including trucks, automobiles, and emergency vehicles; this is typical of downtown San Francisco. Sidewalk noise measurements taken during the weekday p.m. peak commute hours show average noise levels of about 75 dBA Leq on Montgomery and Sacramento Sts./1,2/ Intermittant noises with intensities as high as 90-95 dBA were also measured during this period. The Environmental Protection Element of the Comprehensive Plan (1974) indicates an Ldn of 70 dBA along both Montgomery and Sacramento Sts./3/

Throughout the 20-month construction period, increased noise levels can be expected in the surrounding area. Construction equipment other than impact tools must comply with Section 2907(b) of the San Francisco Noise Ordinance which requires that sound levels not exceed 80 dBA at 100 ft. from the source. Section 2908 of the Noise Ordinance prohibits construction work at night from 8:00 p.m. to 7:00 a.m. if noise from such work would exceed the ambient noise level by 5 dBA at the property line, unless a special permit is authorized by the San Francisco Department of Public Works. Pile-driving would not be required for this project.

Table 12, p. 112, shows typical exterior noise levels associated with the different phases of construction. People inside nearby buildings would experience noise levels lower than those shown in Table 12. With windows

TABLE 12: TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS AT 50 FEET

Construction Phase	Average Noise Level (dBA)
Ground clearing	84
Excavation	89
Foundations	78
Erection	87
Finishing	89

SOURCE: D.N. May, Ph.D., 1978, Handbook of Noise Assessment, Van Nostrand Reinhold Environmental Engineering Series, p. 211.

open, interior noise levels at 50 ft. from the source would be about 10 to 15 dBA less than indicated. Closing windows would reduce noise levels by about 20 to 25 dBA below the tabulated figures.

The effects of human exposure to high noise levels have been widely studied./4/ Sounds exceeding 35 to 40 dBA can interfere with sleep. Sounds above 60 dBA interfere with normal speech. When sounds exceed 70 dBA, noise begins to interfere with concentration and work performance. Prolonged exposure to sounds between 90 and 100 dBA can cause hearing damage.

During the 18 weeks of excavation and foundation work and the 22 weeks of building erection and exterior finishing, noise levels could reach 87 dBA in the Philipine Bank of California at 455 Montgomery St., directly across Sacramento St. from the site. Noise levels could also reach 67 dBA in the Asian American Bank at 500 Montgomery St., across Montgomery St. from the site. Noise levels in Jack's and Paoli's restaurants, at 615 Sacramento St. and 520 Montgomery St., respectively, could reach 70 dBA, with closed windows and doors, and could interfere with normal speech. The two- to three-story retail/office and residential structures (some of which also rely on open windows for ventilation) fronting Sacramento or Commercial Sts. adjacent to and west of the site could also experience noise levels of at least 70 dBA. Daytime sleepers could be affected up to a one-block radius (including a residential hotel on the south side of Clay St. between Montgomery and

Kearny Sts.); interior noise levels at the Chinatown Holiday Inn on Kearny St. would not interfere with sleeping.

Noise levels in the two- to three- story retail/office structures adjacent to and west of the site would allow intermittent communication, requiring raised voices at distances greater than two feet, and would restrict telephone use to a marginal level.

The Bank of Canton and the 456 Montgomery St. building are under construction near the project site. If construction of the three buildings were to overlap so that similar noise levels occurred at the same time, noise experienced by people in the project vicinity could be about 10 dBA higher (twice as loud) than the values given above.

The KABL radio station has offices and a recording studio north of the site at 632 Commercial St. KABL office space with openable windows fronts on Commercial St. Noise levels up to 75 dBA would occur in the offices during demolition and construction activities (with open windows). This noise level would be distracting and annoying, and would interfere with speech and telephone use in these offices. The recording studio at this location is used primarily for recording commercials, and for a live broadcast of a Sunday evening talk show. The recording process does not occur continuously; however, the station management desires that this capability be available on short notice. Because the recording studio is located in the northern end of the KABL building, project construction noise would not affect the use of the studio./5/

NOTES - Construction Noise

/1/ Existing noise levels at the project site are based on noise measurements by Environmental Science Associates on Tuesday, April 5, 1983.

/2/ dBA is the measurement of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to various frequencies of sound. Leq, the equivalent noise level, is the average energy content of the noise over a given time period.

/3/ Ldn, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises. Noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

/4/ Central Institute for the Deaf, 1971, Effects of Noise on People, prepared for the U.S. Environmental Protection Agency.

/5/ Charles M. Salter Associates, Inc., Consultants in Acoustics, letter report, September 15, 1983.

H. ENERGY

Demolition of existing structures, excavation, and removal and transport of excavated material from the project site would require an unknown amount of energy. Project construction, including fabrication and transportation of building materials, would consume approximately 550 billion British thermal units (Btu) of energy at-source, or the equivalent of about 99,000 barrels of crude oil./1,2/

Pacific Gas & Electric Company (PG&E) would provide electricity and natural gas to the proposed project through its existing distribution system. Project mechanical systems designs are not complete; however, the project would include several energy-conservation features: multiple switching for lights, allowing illumination of one portion of an office in use; an outside-air/return-air economizer cycle, which would allow for the use of outside air to cool the building when outdoor temperatures are lower than indoor; a variable volume air conditioning system, which chills air to the coldest temperature needed to cool the warmest spot in the building and then adds only enough super-cooled air into each area as needed to cool that particular area; and carbon monoxide monitoring which would control garage ventilation./3/

The project would have an estimated annual energy consumption of about 122,400 Btu per sq. ft.,/3/ and would meet the performance standards of Title 24 of the California Administrative Code, which permit consumption of a maximum of 126,000 Btu per sq. ft. annually for office space./4/ Average daily energy demand would be about 335 Btu per sq. ft.

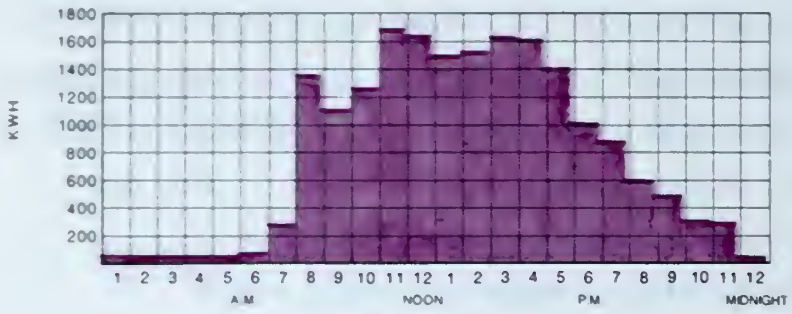
Table 13, below, shows annual project energy consumption. Project operation would consume (at point-of-use) about 3.9 million kilowatt-hours (kWh) of electrical energy per year, primarily for ventilation and cooling./3/ Monthly electrical use would range from approximately 269,000 kWh in February to about 363,000 kWh in August. Average electrical consumption would be about 11 kWh per sq. ft. per year compared to an estimated average of about 17 kWh per sq. ft. per year for ten other recently proposed high-rise office structures./5/ Average monthly electricity consumption would reach 0.32 million kWh or about 0.94 kWh per sq. ft. per month. Figure 36, p. 116 illustrates peak daily and annual electrical consumption distributions. Peak electricity consumption would occur on August mornings, and would not coincide with PG&E's system-wide peak demand period on August afternoons. The project would consume (at point-of-use) about 2.0 million cubic feet of natural gas per year (or about 5.6 thousand cubic feet per day average) for space and water heating (see Table 13)./3/ Natural gas consumption would equal about six cubic feet per sq. ft. per year for the project as compared to an estimated average of 13 cubic feet per sq. ft. per year for ten other recently proposed high-rise office structures./5/ Figure 37, p. 116 shows peak daily and annual natural gas consumption distributions. Peak natural gas consumption would occur on January mornings, and would not coincide with PG&E's system-wide peak demand period on January evenings.

TABLE 13: PROJECTED ANNUAL PROJECT ENERGY CONSUMPTION

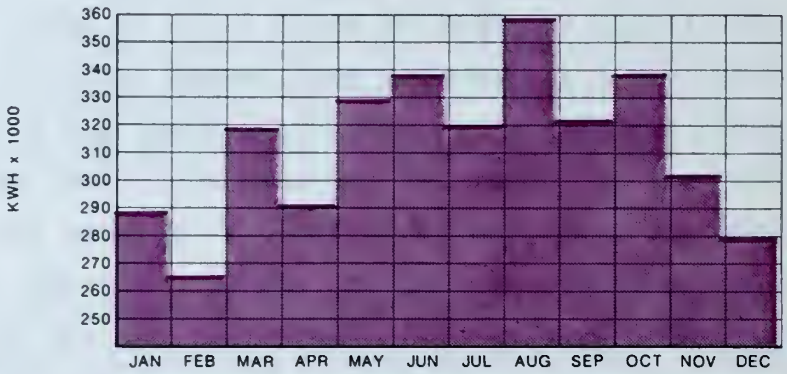
Building Operation	Units of Energy	Btu at Source/a/
Electricity	3.9 million kWh	40 billion
Natural Gas	2.0 million cu.ft.	2.3 billion
Transportation/b/		
Gasoline	121,000 gallons	17 billion

/a/ 1 kWh = 10,239 at-source Btu; 1 cu.ft. = 1,100 at-source Btu; 1 gallon = 140,000 at-source Btu.
/b/ For vehicle trips generated by the project.

SOURCE: Skidmore, Owings and Merrill; Environmental Science Associates, Inc.



Peak Day Electrical Consumption (August)

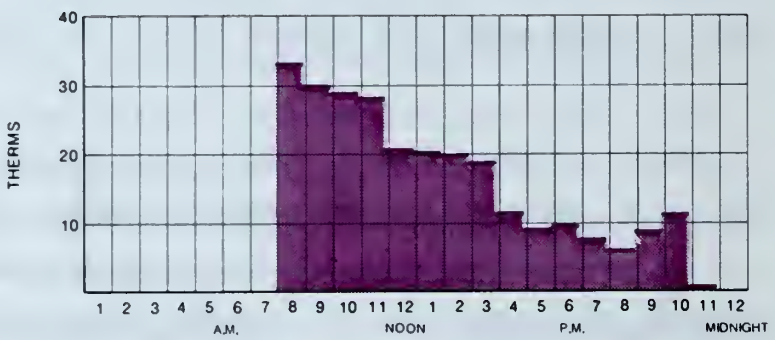


Average Monthly Electrical Consumption

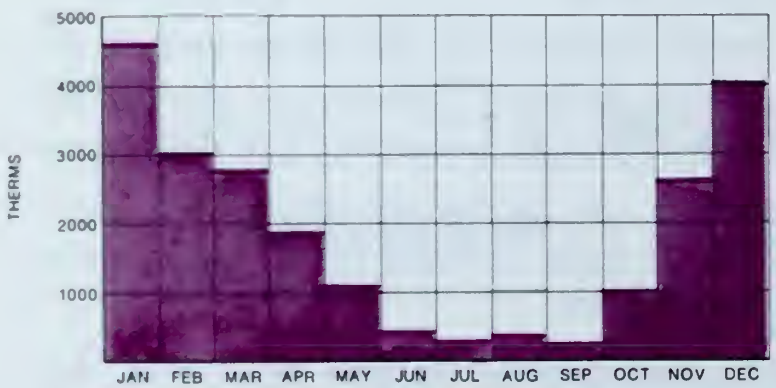
FIGURE 36

Projected Electrical Demand Distribution

SOURCE
Skidmore, Owings & Merrill



Peak Day Natural Gas Consumption (January)



Average Monthly Natural Gas Consumption

FIGURE 37

Projected Natural Gas Demand Distribution

SOURCE:
Skidmore, Owings & Merrill

Existing energy use by the buildings on the site is estimated to be about 1.4 million kWh of electricity per year, and about 12 million cubic feet of natural gas per year./6/ Of these, the existing buildings to be retained are estimated to use about 0.6 million kWh of electricity per year, and about 0.3 million cubic feet of natural gas per year. The project would thus increase electricity consumption over the whole site by about 3.1 million kWh per year, and decrease natural gas consumption by about 9.7 million cubic feet per year. (The decrease in natural gas consumption would be caused by the elimination of several restaurants, which use large amounts of natural gas in comparison to office and retail uses.)

Project-generated vehicle travel would consume approximately 121,000 gallons of gasoline annually, based upon the projected mix of vehicles expected to be in use in California in 1985. In general, statewide per-vehicle fuel use should decrease as the vehicle fleet becomes more efficient. Additional energy would be consumed by ferries, buses, trains, and light rail vehicles serving project employees. Transportation energy would be derived from renewable, primarily hydroelectricity, and non-renewable resources.

Although the project's energy demand would probably not have a substantial effect on resource extraction, it would contribute to cumulative energy consumption that would result in eventual depletion of nonrenewable energy resources. Energy use in downtown San Francisco by cumulative development under formal review, approved, and under construction (see Appendix C, Table C-2, p. A-29), including the project, would increase annual electricity consumption by about 230 million KWH, or about 10% of PG&E's projected systemwide increase over the next 10 years,/7/ and would increase annual natural gas consumption by about 390 million cu. ft. The total increases in building energy demand resulting from approval of these developments would be about 2.8 trillion Btu annually, equivalent to about 470,000 barrels of oil per year.

The electrical consumption by cumulative development in downtown San Francisco (see above) represents about 0.3% of the annual PG&E system demand in 1981. In 1981, PG&E had a surplus peak generating capacity of 4,500 MW, and in 1985 expects to have a surplus of 4,200 MW. The energy demand presented by

cumulative development in downtown San Francisco (peak demand of about 240 MW) could be accommodated by PG&E facilities now and in the future./7/

PG&E currently obtains its electric energy from oil, natural gas, nuclear, hydroelectric and geothermal sources. New demands for electricity in the PG&E service area of Northern California are anticipated to be met primarily from coal, nuclear and hydroelectric sources. Co-generation and additional geothermal power development are planned to supplement the existing supplies.

Among the major new power plants expected by PG&E are the Diablo Canyon nuclear plant and the Helms Pumped Storage hydroelectric plant. PG&E expects approval of low-power testing at the Diablo Canyon plant in the first quarter of 1984, and full-scale commercial operation in the second quarter of 1984./8/

PG&E does not currently operate any nuclear power plants. It purchases power from Sacramento Municipal Utility District's (SMUD) Rancho Seco nuclear generator and some nuclear-generated power may be purchased by the utility through its Pacific Northwest Intertie. PG&E anticipates increased purchases of electricity from other utilities, primarily hydroelectric and nuclear facilities in the Pacific Northwest, as available./9/ These surpluses are uncertain because of cancellation of two of the five Washington Public Power Supply System nuclear plants and long-term delays in two other plants because of financial problems. Increases in demand for power in the Pacific Northwest and fluctuation in available hydropower because of climatic variation could also affect supplies from the Pacific Northwest.

The Helms Pumped Storage (hydroelectric) generator began testing in August, 1983. Units 1, 2 and 3 (375,000 kilowatts each) are expected to be in commercial operation in early 1984. The Helms project would add to reserve margins and would reduce the need for purchases of peak-period power supplies from outside sources./10/

PG&E would be able to supply full electrical service to the project without Diablo Canyon; however, projected costs would be higher and reserve margins would be lower than desired by the utility./8/ Extreme peak demands for

electricity systemwide, if combined with forced generator outages, could deplete reserve margins, necessitating purchases of electricity from other utilities or resulting in short-term "brown-outs."

NOTES - Energy

/1/ Hannon, et al., 1978. "Energy and Labor in the Construction Sector", Science 202.

/2/ British thermal units (Btu) are units for measuring energy. One Btu is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level. The term "at-source" means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy which occur during generation and transmission of the various forms of energy, as specified in Energy Resources Conservation and Development Commission, 1977, Energy Conservation Design Manual for New Nonresidential Buildings, Sacramento, CA; and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978, Energy and Transportation, Sacramento, CA (Project 20-7, Task 8).

/3/ Skidmore, Owings & Merrill, Interoffice Memorandum, 505 Montgomery St. - EIR, April 12, 1983.

/4/ State energy efficiency standards are described in Energy Resources Conservation and Development Commission, February 1980, Conservation Division Regulations Establishing Energy Conservation Standards for New Residential Buildings and New Nonresidential Buildings, California Administrative Code, Title 24, Part 6.

/5/ Energy consumption values as reported in environmental analyses for projects listed in Appendix G, p. A-56.

/6/ Existing energy consumption estimated using factors in Citizens Energy Policy Advisory Committee, April 1982, Report on Recommendations for Reducing Community Energy Costs in the City and County of San Francisco.

/7/ Pacific Gas and Electric Company, April 1, 1982, Summary of Loads and Resources (Form R-1A), and Future Generating Facilities and Changes to Existing Facilities (Form R-6).

/8/ George Sarkisian, Public Relations Department, Pacific Gas and Electric Company, telephone conversation, October 28, 1983.

/9/ Jim Davidson, Senior Civil Engineer, Pacific Gas and Electric Company, telephone conversation, May 21, 1982.

/10/ Ron Rikowski, Public Relations Department, Pacific Gas and Electric Company, telephone conversation, October 28, 1983.

I. EMPLOYMENT, HOUSING AND FISCAL FACTORS

EMPLOYMENT

Direct Project-Related Employment

After completion, the project would accommodate a total of about 1,480 permanent full-time jobs (new-construction floor area plus existing retained floor area). The net new jobs at the project site would be about 1,220 (new-construction floor area minus the demolished floor area). (See Table 14, p. 121.) Although no tenants have been secured, prospective tenants are anticipated to consist mainly of corporate and professional businesses. Since specific tenants are unknown, the projected total number of employees was derived on the assumption of an average number of sq. ft. per employee, by employment type. About 100 office employees and 40 retail employees would be displaced by the project (assuming full occupancy of existing buildings; some space is currently vacant - see Table 2, p. 42). The tenants in the retained buildings would not be displaced.

Indirect (Secondary) Employment

Secondary employment and income would result from permanent project employment, through the multiplier effect. Each employee on the site would generate additional employment through expenditures for goods and services. On the assumption that the new and retained jobs accommodated by the project would be primarily in the finance, insurance, and real estate (FIRE) sector, about 1,440 additional jobs in other sectors of the Bay Area economy would result from the project./1/ Thus, the total number of Bay Area jobs that would be supported by growth in downtown employment due to the project would be about 2,660 (1,220 project jobs plus 1,440 jobs from the multiplier effect)./1/

Project construction would require about 200 person-years of labor, about 125 construction jobs over a 19-month construction period. About 310 additional person years of employment would be generated in the Bay Area as a result of the multiplier effect of project construction./1/

TABLE 14: PROJECTED PERMANENT EMPLOYMENT AT THE PROJECT SITE/a/

Employment Type	Building Space (Gross Sq. Ft.)	Space per Employee (Sq. Ft.)	Projected Number of Employees
Office			
New	327,250	250/b/	1,310
Retained	27,040		110
TOTAL	354,290		1,420
Retail			
New	9,900	350/b/	30
Retained	2,200		10
TOTAL	12,100		30 /f/
Building Staff	366,390	12,000/b/	30
TOTAL EMPLOYMENT/c/			1,480 /f/
EXISTING ON-SITE EMPLOYEES/d/			(260)
NET NEW EMPLOYEES/e/			1,220

/a/ Rounded to the nearest ten employees.
/b/ Based on one worker per 250 sq. ft. of office space, one worker per 350 sq. ft. of commercial/retail space and one janitorial service worker per 12,000 sq. ft., (California Office of Planning and Research, Economic Practices Manual, January, 1978).
/c/ Based on new-construction floor area plus existing retained floor area.
/d/ Based on total existing floor area.
/e/ Based on new-construction floor area minus existing demolished floor area.
/f/ Total does not reflect the sum of the rounded numbers; sum of actual figures used for total employment.

SOURCE: Environmental Science Associates, Inc.

HOUSING

Project-Related Effects

As indicated in the previous subsection, the project would result in a net increase in on-site employment of about 1,200 full-time jobs. To the extent that the project would attract out-of-area employees and also contribute to the formation of additional households by existing area residents, it would contribute to increased housing demand.

On the basis of the assumptions described in the 101 Montgomery Street Final EIR, between 15% and 30% of net new employees would be expected to move to San Francisco and each household would be occupied by 1.4 workers./2/ The project could thus result in about 130 to 260 new households in San Francisco. The housing formula contained in the Office Housing Production Program Interim Guidelines assumes 40% of downtown office workers would live in San Francisco and each household would be occupied by 1.8 workers; thus the project would generate a demand for about 270 dwelling units in San Francisco. The number of new households to be generated outside San Francisco as a direct result of the project is projected to be about 170 on the Peninsula, about 280 in the East Bay, and about 110 in the North Bay (see Appendix C, Table C-3, p. A-33). These projected housing effects would be less if the newly created jobs were filled by unemployed Bay Area residents. In December 1982, the unemployment rate in San Francisco was 8.8%./3/ New household formation in the Bay Area results not only from economic development, but also from children reaching maturity, immigration and other demographic factors independent of office development in San Francisco./4/

The project sponsor proposes to mitigate the project-generated demand for 270 units in San Francisco through either direct sponsorship of a housing development or financial aid to a housing development, as provided for in the City's Office Housing Production Program.

Housing Affordability

A discussion of the parameters affecting an analysis of housing affordability for new office workers is contained in the 123 Mission Street Final EIR, hereby incorporated into this EIR by reference pursuant to the California Environmental Quality Act (CEQA) Guidelines, Section 15149./5/ Briefly, a survey of occupants of a building comparable to the project would yield some housing affordability data, but not all the data necessary for a complete analysis./6/ Not all of the new employees attributable to the project would be located on the project site; some of the new jobs would be created in existing buildings vacated by workers or firms moving to the project./2/ Even if the number of new employees and their preferences for housing were known, a household's ability to pay for housing depends on a variety of factors in

addition to individual income, such as family composition and housing preferences./6/

In the absence of an employee-specific survey, a limited analysis of housing affordability, based on available data, appears in Appendix C, Table C-4, p. A-34. Data in the Table are based upon published sources of office worker incomes (not household income), and published sources of housing prices (not necessarily existing vacant units). Assumptions are made regarding the ratio of housing expenses to income, mortgage interest rates, and down payments. Analysis based on these data and assumptions indicates that most project employees would not be able to afford ownership of housing in San Francisco, although some employees, depending on the number of workers per household, would be able to do so. Most project employees, except the lowest-paid clerical employees living alone, would be able to afford rental housing in San Francisco. These conclusions are conditioned by the assumptions listed above.

FISCAL

Revenues

The proposed project, after occupancy in 1986, would generate about $1.18 million in total property, payroll, sales, gross receipts and utility tax revenues to the City's General Fund, a net increase of about $1.03 million over revenues generated to the General Fund from the existing site uses. General fund revenues with the project would result from the new building and the retained buildings. The net increase is derived by subtracting revenues generated by all existing on-site uses from project-generated revenues. (See Tables 15 and 16, pp. 124 and 125.)

Assessed Valuation and Property Taxes

Based on replacement costs, the fair market value of the project would be about $72 million (in 1983 dollars)./7/ On the basis of the property's full assessed (or market) value, the project would generate a total of about $842,000 annually in total property tax revenues (from the $1.17 per hundred

TABLE 15: DISTRIBUTION OF PROPERTY TAX REVENUES FROM THE PROJECT SITE IN 1986 (1983 DOLLARS)

Agency	Tax Rate/a/	Ad Valorem Percent/b/	Revenues/b/
City and County of San Francisco			
General Fund	0.874	74.7%	$629,400
Open Space Acquisition	0.025	2.1	18,000
Bond Repayment	0.099	8.4	71,100
S.F. Community College District	0.014	1.2	10,400
S.F. Unified School District			
General Purpose	0.078	6.7	56,100
Debt Service	0.008	0.7	6,000
Bay Area Air Quality Management District	0.002	0.2	1,500
BART			
General Fund	0.006	0.5	4,600
Debt Service	0.063	5.4	45,200
TOTAL	$1.17	100.0%	$842,400/a/

/a/Rounded.
/b/Based on the 1982-83 composite tax rate of $1.17 per $100 of assessed valuation and an assessed valuation of $72 million. Rounded to nearest $100.

SOURCE: San Francisco Controller's Office; calculations by Environmental Science Associates, Inc.

dollars of assessed value). Projected annual property tax revenue of about $629,400 would accrue to the City's General Fund, a net increase of about $593,800 over existing ($35,600) 1982-83 property tax revenues to the City.

The building would also generate property tax revenues to be used to retire bond debts. The tax rate at which these revenues would be generated in 1986 would depend on the amount of principal and interest payments due in that year and the total assessed value of property in San Francisco. The rate in 1982-83 is $0.17 per hundred dollars of assessed value. If that were still the rate in 1986, when the building would be occupied, bond payment revenues

TABLE 16: PROJECTED NET TAX REVENUES GENERATED DIRECTLY INTO THE GENERAL FUND BY THE PROPOSED PROJECT

Tax Category	Tax Rates (1982-83)	Revenues/a/ Existing Site	Proposed Project	Net Increase (Decrease)
Property Tax	74.7% of $1.17/$100 fair market value	$35,600	$629,400	$593,800
Payroll Tax	1.5% of gross payroll expenditures	71,900	435,900	364,000
Gross Receipts Tax	0.3% of total rental income	2,600	38,400	35,800
Sales Tax	1.25% of gross retail receipts	28,600	38,100	9,500
Utility Tax	0.5% of gross expenditures	10,000	39,600	29,600
	TOTALS	$148,700	$1,181,400	$1,032,700

/a/ Rounded to nearest $100.
See Notes /7/-/13/, p. 133, for sources and assumptions used to derive payroll, gross receipts, sales and utility tax revenues.

SOURCE: Environmental Science Associates, Inc.

from the building would be about $122,000, a net increase of about $115,000 above existing 1982-83 bond retirement revenues of about $7,000. The complete distribution of bond and non-bond property tax revenues that would be generated by the proposed project is shown in Table 15, p. 124.

Payroll and Gross Receipts Taxes

Tenants of the proposed building would pay either the payroll or gross receipts tax, whichever is greater./8/ Payroll tax revenues from the project would be about $436,000 per year, on the assumption of the following: 1) payment of a payroll tax by all tenants; 2) a 1982 average wage of about $25,000 for downtown office workers/9/ and $13,200 for retail and maintenance workers/10/; and 3) the current approved payroll tax rate of 1.5%. The Payroll Tax Ordinance exempts about 10% to 20% of the employees from the tax

because banks, insurance companies, and owners of businesses with tax liabilities of less than $2,000 do not pay business taxes under the ordinance. The owners of the project would pay a 0.3% gross receipts tax on their rental income. The projected total annual rental income for the project would be about $12.8 million (1983 dollars), based on the assumption of $35 per sq. ft. per year rent for office space. Gross receipts tax revenues therefore would be about $38,500. Total payroll and gross receipts tax revenues would be a net increase of about $473,000 above the local business taxes (about $72,000) generated by the existing uses on the project site.

The 1.5% payroll tax and 0.3% gross receipts tax are the rates approved by Board of Supervisors' Ordinances 118-80 and 119-80. These rates could be increased in the future if the Board of Supervisors were to enact new ordinances./11/

Sales Tax

Sales tax revenues would be generated by employee expenditures and the project's retail space. It is assumed that gross receipts of the retail space would be about $120 per sq. ft. Based on a rate of 1.25% of gross retail sales, projected annual sales tax revenues accruing to the City from taxable expenditures by project employees for retail goods and by on-site retail sales would be about $38,000, compared to about $28,600 at present, an increase of about $9,000./12/

Utility Taxes

General Fund revenues are generated to the City by utility taxes on water, gas, electricity and telephone (telephone costs are generally the largest contributors). The existing site utility use generates about $10,000 annually in utility tax revenue to the City. Projections of utility use indicate that the project would generate about $40,000 annually from utility taxes, an increase of $30,000./13/

Total Revenues

General Fund revenues for the City and County of San Francisco from the project would total about $1.18 million, based on the tax rates and fees in effect in fiscal year 1982-83. General Fund revenues from the existing uses on the site totaled about $154,000 in 1982; the project would result in about a $1.03 million net increase in General Fund revenues (see Table 16, p. 125). Projected total and net revenues accruing to the General Fund from the project site are based on 1982-83 tax rates and business conditions. Total revenues could change if property tax distribution to the City and County were to change in future years; if payroll taxes were to change, as a result of change in employee's salaries; if office and retail rents were to fluctuate, affecting gross receipts tax revenue; and if costs for utilities were to change, particularly telephone costs, which are the largest contributors to the total utility users' tax.

Costs

Muni

The estimated 1980-81 (most recent Muni estimate) net marginal cost (or increase in the deficit for Muni operations) per additional ride is $0.39./14/ The project would generate about 401,700 rides per year, which could generate a cost deficit to Muni of about $157,000./14/ The project would partially pay for this deficit through its contributions to the General Fund. In the 1982-83 budget, about 10% of General Fund revenues were allocated to Muni. On the basis of the total General Fund revenues that would be generated by the project, the contribution to Muni would be about $118,000 (1983 dollars) after project occupancy. On the basis of the marginal cost figures provided by Muni, the project would result in a net annual deficit to Muni of about $39,000. This deficit could be greater because the Muni deficit-per-passenger-trip figure is based on 1980-81 data, the marginal cost is based on all rides and not peak-period rides, and the total project-related deficit is calculated for only those riders who would use Muni as their primary mode of transportation, excluding riders who would use a combination of transportation modes, such as Muni and Southern Pacific.

Effective April 1, 1982, the Muni fare per ride was increased from $0.50 to $0.60. The increase was made primarily to meet the fare-box revenue requirements of Assembly Bill (AB) 1107. AB 1107 allows Muni to receive a portion of the one-half cent BART sales tax revenue for operating expenses, provided that at least one-third of Muni's annual operating cost is paid from fare-box revenues.

On April 27, 1981, the San Francisco Board of Supervisors approved Ordinance 224-81 to assess new downtown commercial development to support Muni. The plan called for a one-time fee of up to $5.00 per gross sq. ft. upon construction of new downtown office space. The ordinance, currently in litigation, would contribute funds for operating costs and capital improvements for Muni transit services. If the one-time fee is upheld, the project could generate up to about $1.5 million in one-time fee revenues to Muni. About $1.5 million has been collected to date from other projects. About $34 to 40 million could be collected in the next five to six years. There are no specific plans at this time for use of the fee revenues./15/

Muni has received a federal grant including $31 million in federal monies and $8 million in state monies; these funds are being used to purchase new equipment, including 110 standard diesel buses and a number of articulated buses. Muni also intends to purchase 57 articulated buses (31 diesels and 26 electric trolleys) with $21 million it will receive from the General Fund as authorized by the passage of Proposition B in November 1982. These revenues are for capital costs as opposed to the one-time transit impact fee, which would be used for both operating and capital expenses.

According to a memorandum entitled "Muni's Plans to Accommodate Downtown Growth" issued by Dean Macris, Director of Planning, August 5, 1982, Muni expects to be able to meet projected cumulative demand due to downtown office development without new City taxes. According to the worst-case scenario in the memorandum, the San Francisco Municipal Railway Improvement Corporation, a non-profit corporation established in 1971 for the purpose of selling bonds for transit improvements, may have to raise about $111 million through the sale of bonds over a ten-year period to finance Muni expansion. Muni would also be expected to receive additional revenue from the recent increase in the

federal gasoline tax, although this revenue source cannot be estimated reliably at this time.

BART

BART budget projections for the 1983-84 fiscal year estimate a net operating deficit per passenger of about $1.30./16/ With about 334,400 rides per year, the estimated annual BART deficit attributable to the project would be about $434,700./17/ The project would generate about $61,200 in revenue to BART, including about $49,800 in property tax revenue, and about $11,400 from the 75% allocated to BART of the 0.5% transit sales tax. (The remaining 25% of the 0.5% transit sales tax revenue is distributed among BART, Muni and AC Transit by MTC.) After subtraction of BART's revenues from sales and property taxes that would be generated by the project, the net operating deficit of BART due to the project would be about $373,500.

For Fiscal Year (FY) 1981-82, BART attained a net operating surplus of $7.6 million (after applying $67.3 million in financial assistance) from property taxes, the 0.5% transit sales tax and state aid. In 1981-82, BART used $2.6 million of this surplus to purchase capital equipment. The "BART 1982-87 Five-Year Plan" (adopted June 24, 1982) projects an overall operating surplus (after property tax, sales tax and other governmental assistance) of $60.4 million from FY 1982-83 to FY 1986-87. These funds, together with federal revenues earmarked for transit from the recently approved $0.05-per-gallon gasoline tax increase, could be applied to capital improvements by BART to meet cumulative transit needs of the region.

Costs and Net Revenues

Costs to San Francisco for providing municipal services (for example, fire, police, and general government) to the proposed project are difficult to estimate. Several studies on new office development indicate that overall costs per unit of service provided (per sq. ft. or per employee) to the new building would be lower than for existing buildings (Appendix C, Table C-5, p. A-37, identifies these fiscal impact studies and briefly discusses their findings). This reduction in per-sq.-ft. costs would be due primarily to

improvements in fire and security protection systems in new construction. Costs for water and sewer service would be paid through user charges.

In general, existing public facilities, equipment, and labor are adequate to serve the project. While total costs for serving the site would increase because of the larger floor space and employment, costs per unit of service would not increase, and might actually decline.

CUMULATIVE AND INDIRECT EFFECTS

Downtown Office Space

The proposed project, together with other major downtown office buildings under formal review (3.3 million net new sq. ft.), approved (4.7 million net new sq. ft.), under construction (4.8 million net new sq. ft.), and recently completed but not yet fully occupied (6.1 million net new sq. ft.) would add about 18.9 million gross sq. ft. of net new office space if all were to be built (see Appendix C, Table C-2, p. A-29). This projection subtracts existing office space, on the sites of new buildings, that would be demolished.

If all 18.9 million sq. ft. of office space were to be completed by 1990, there could be a short-term cumulative impact of oversupply while the market adjusted itself to absorb the new space. During this period, commercial rents might be expected to decline, especially in the core of the downtown area, and vacancy rates could rise. The number of proposed new office developments could decline if there were not sufficient demand for office space planned or under construction, and for office space that would become available as existing leases expire. The overall effect of this slowed growth rate in downtown office development would be to relieve pressure for replacement of older buildings with new ones, and for conversion and rehabilitation of existing low-intensity retail, warehouse and industrial use with office use, most notably in the South of Market area.

Housing

The relationship between downtown office growth and housing demand in San Francisco has not been documented conclusively by a quantitative

analysis. The 101 Montgomery Street Final EIR discusses the relationship between housing demand and downtown office growth./2/ That report is available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, 5th floor, and is hereby incorporated by reference into this EIR pursuant to Section 15149 of the CEQA Guidelines. In summary, that EIR states that relatively high wages and employment opportunities attract people to San Francisco, but that many people cannot afford the high housing costs in the City. The report estimates the residency patterns of new households attributable to a new high-rise office building and discusses various employment growth assumptions and their housing market implications.

The project would add about 300,000 gross sq. ft. of net new office space as part of a cumulative total of about 18.9 million gross sq. ft. of net new office space now under construction, approved, under formal review, or recently completed but not occupied (based on the total net new gross office space in San Francisco shown in Appendix C, Table C-2, p. A-29). The project would be about 1.6% of this new office space.

If the assumptions used and explained in the 101 Montgomery Street Final EIR are applied to cumulative office development (i.e., that 15% to 30% of the new office employees would be expected to move to San Francisco and that the average household would consist of 1.4 downtown workers), housing demand would increase by about 8,100 to 16,800 new households in San Francisco because of new office space development (see Appendix C, Table C-3, p. A-33).

If the assumptions used in the formula prescribed by the Office Housing Production Program (OHPP) Interim Guidelines of January 1982 are used (i.e., 40% of the new employees attracted to the new jobs created would want to live in San Francisco and the average household would be occupied by 1.8 downtown workers), there would be a new demand for about 16,800 dwelling units in San Francisco. (See Appendix C, Table C-3, p. A-33. This Table also outlines regional housing effects of cumulative San Francisco office development.)

A precise quantification of the effects of cumulative office development on San Francisco housing prices is not possible. The new demand could be

accommodated through additions to the housing stock, increases in the number of office workers per household, and/or displacement of existing residents. Factors independent of office development and outside the control of the City, including immigration, interest rates, state and federal tax policies, and economic trends, also influence the housing market.

Fiscal Considerations

Net public costs of providing services to cumulative downtown development are difficult to quantify. Appendix C, Table C-5, p. A-37, discusses approaches that have been attempted to address the net public costs of downtown development.

According to three of the studies, downtown development could result in an initial public fiscal benefit. Since revenues to the City would probably increase at a slower rate than costs, because of Proposition 13 (California Constitution Article XIII A) limitations on property tax increases, there could be a time when cumulative costs of providing services to currently proposed and approved development would be higher than revenues provided. This would be the case only if no new revenue sources were found, the rate of new development declined, or proposed developments were not sold at some future date.

NOTES - Employment, Housing and Fiscal Factors

/1/ Indirect employment projections are based on the Bay Area Input-Output Model from Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974, July 1978. A multiplier of 1.18 was used for FIRE and 1.55 for construction.

/2/ 101 Montgomery Street Final EIR, EE 80.26, certified May 7, 1981, Appendix C, pp. 289-329, prepared by Recht, Hausrath and Associates, Urban Economists.

/3/ California Employment Data and Research Division, "California Labor Market Bulletin," January 1983.

/4/ Report of the Citizens' Housing Task Force, San Francisco, July 29, 1981, and Association of Bay Area Governments, Housing Needs Report, December 1981.

/5/ 123 Mission Street Final EIR, 81.183E, certified June 30, 1983, pp. 66-68.

/6/ Questor Associates, Feasibility of Performing a Housing Affordability Analysis, June 15, 1982. This study is on file and available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, 5th Floor.

/7/ Martin Brown, The Empire Group, letter, April 29, 1983.

/8/ San Francisco Tax Collector's Office, Payroll Expense Tax and Business Tax Ordinances (as of December 1980).

/9/ This assumption based on information contained in 466 Bush Street Final EIR, 81.175E, certified August 20, 1982, pp. 41-42 and Growth Management Alternatives for Downtown San Francisco, Environmental Science Associates, Inc., May 1983, p. IV.C.15.

/10/ California Labor Market Bulletin Statistical Supplement, State of California, Economic Development Department, August 1981.

/11/ Burke Delventhal, City Attorney, telephone conversation, September 7, 1982 and Diane Berry, City Attorney, telephone conversation, September 20, 1982. On August 5, 1982, the State Supreme Court ruled (City and County of San Francisco vs. Farrell) that increased payroll and gross receipts taxes adopted by the Board of Supervisors (Ordinances 113-80 and 119-80), approved by fewer than two-thirds of the voters in San Francisco, are constitutional and not violative of Proposition 13 (California Constitution Article XIII A).

/12/ Taxable expenditures per office worker within the downtown were $715 per year based on income of $16,300 in 1974 (San Francisco Planning and Urban Renewal (now Research) Association (SPUR), Impact of Intensive High Rise Development in San Francisco, Detailed Findings, June 1975. The ratio of taxable expenditures to income was 0.0439; the ratio is independent of inflation.

/13/ Annual utility users' tax revenues were calculated as follows, with 1982 utility rates:

Water:	1.41 million cubic ft. per year x $0.00414 per cubic ft. x 5% tax = $300.
Gas:	22,868 therms per year x $0.49 per therm x 5% tax = $560.
Electricity:	3.75 million KWH per year x $0.0707 per KWH x 5% tax = $13,300.
Telephone:	366,390 gross sq. ft. x $1.40 per sq. ft. per year x 5% tax = $25,700.
TOTAL:	$39,600 (rounded).

/14/ According to Bruce Bernhard, Muni Chief Accountant, telephone conversations, August 10 and 23, 1982, the average $0.39 deficit per mile is based on 1980-81 Muni budget figures of an additional cost per ride (marginal cost) of $0.71 and an average fare revenue per trip of $0.32. Muni is unable to provide more recent data on cost and revenue figures per passenger. The $0.39 figure is still considered valid (James Smith, Senior Administrative Analyst, Muni, telephone conversation, November 8, 1983). The deficit due to the project would be: 401,700 annual Muni trips x $0.39 deficit per ride =

$156,663. The total annual Muni trips were derived using the 24-hour trips methodology specified in the "Guidelines for Environmental Impact Review: Transportation Impacts," Department of City Planning, September 1983.

/15/ Francis Nye, Transit Impact Fee Coordinator, San Francisco Public Utilities Commission, telephone conversation, November 14, 1983.

/16/ Sy Mouber, Manager of Public Information, BART, telephone conversation, October 4, 1983. The $1.30 average deficit per ride is based on all operating costs and revenues and does not include capital expenditures.

/17/ 334,360 annual BART trips X $1.30 net deficit per ride = $434,668. Total annual BART trips were derived in accordance with the Transportation Impact Guidelines (see Note /14/).

J. GROWTH INDUCEMENT

The project would add about 300,000 net new gross sq. ft. of office and retail space (after subtraction of existing space on-site) to the Financial District. Employment at the site would increase by about 1,220, from about 260 to about 1,480. Occupants are not currently known, but would probably include tenants expanding or relocating from other San Francisco locations, tenants relocating from outside San Francisco, and firms new to the Bay Area. Therefore, the increase in employment at the project site would not necessarily represent only employment that is new to San Francisco. If the building were fully leased and the office space provided by the project did not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco would increase directly by about 1,220 jobs due to the project. Approximately 1,440 additional jobs would be supported indirectly in San Francisco through the multiplier effect (see Section IV.I. Employment, Housing, and Fiscal Factors, p. 120).

Any net increase in employment downtown, including that associated with the proposed project office space, would increase demand for retail goods and services in the area. Some of this demand would be met by the proposed retail space on the ground floor of the project, although the project would create a net decrease in retail space on the site.

The project would respond to a demand for office space in San Francisco's Financial District. The demand itself is independent of the project. Demand for office space continues the trend of growth in service sector and headquarters office activities and employment in San Francisco. Increases in downtown office space and employment would contribute, in turn, to continued growth of local and regional markets for goods, services, and housing. These growth-inducing effects would be less extensive if the vacancy rate for office space rises. Should this occur, projected increases in downtown employment would be less and the growth in demand for goods, services and housing would be lower.

It is expected that some new downtown workers, including some of those in the project, would desire to live in San Francisco. Employment growth, however, may not directly correspond to increases in demand for housing and City services to residents, as some new jobs would be held by individuals who already live in the City but who previously either did not work or worked outside the City, by those who prefer to live in surrounding communities, or by those unable to afford or locate housing in the City. New downtown workers would also increase demand for housing in other parts of the Bay Area.

Increases in employment downtown would also increase demand for business services to the extent that new space would not be occupied by firms providing those services. In response, businesses providing these services would increase demand for existing space and, possibly, induce further new development.

V. MITIGATION MEASURES PROPOSED TO MINIMIZE THE POTENTIAL ADVERSE IMPACTS OF THE PROJECT

In the course of project planning and design, measures have been identified which would reduce or eliminate potential significant environmental impacts of the proposed project. Some of these measures have been adopted by the project sponsor or project architects and contractors, and thus are proposed as part of the project; some are under consideration; and some have been rejected. The mitigation measures and their status are discussed below. Measures under consideration, or measures rejected by the sponsor, may be required by the City Planning Commission as conditions of project approval.

HISTORIC, ARCHITECTURAL AND CULTURAL RESOURCES

MEASURES PROPOSED AS PART OF THE PROJECT

- Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

URBAN DESIGN AND VISUAL QUALITY

MEASURES PROPOSED AS PART OF THE PROJECT

- The project would retain and refurbish two existing low-rise, older office buildings with ground-floor retail uses, at 638-640 Sacramento St. and 653-655 Commercial St., which would maintain the low-scale, pedestrian oriented uses of Commercial and Sacramento Sts. (Existing tenants of these buildings would not be displaced.)

- The project tower would include ground-floor commercial uses fronting Commercial, Montgomery and Sacramento Sts., to maintain pedestrian interest and scale on those frontages.

- The project would include landscape elements, such as mature street trees and sidewalk plantings on Montgomery, Sacramento, and Commercial Sts. Landscaping would be implemented in consultation with the Department of City Planning and the Department of Public Works in order to maintain adequate sidewalk pedestrian flows, and to coordinate with other development on this block of Commercial St.

OTHER MEASURE

- The project sponsor could develop additional street-level retail space fronting Commercial and Sacramento Sts. in the 638-640 Sacramento St. building. This building, proposed to be retained and refurbished on the exterior as part of the project, is now used for office space only. This measure is under consideration by the project sponsor. A decision would be made after further investigation of the condition of the building and of potential effects on tenant displacement.

TRANSPORTATION, CIRCULATION AND PARKING

MEASURES PROPOSED AS PART OF THE PROJECT

- Should Ordinance 224-81, which requires the sponsor to contribute funds for maintaining and augmenting transportation service in an amount proportional to the demand created by the project, be declared invalid by the courts, the project sponsor has agreed to participate in any subsequent equivalent mitigation measures adopted in lieu thereof that are equitable and legal, which the City adopts to apply to all developments which are similarly situated.

- A member of the building management staff would be designated as a "transportation broker" to coordinate measures that are part of a transportation management program, such as: encouraging a flexible time system for employee working hours (to be developed by project tenants in consultation with the Department of City Planning) to reduce peak period congestion by a planned spreading of employee arrivals and departures; encouraging transit use through the on-site sale of BART, Muni, and other carriers' passes to employees; and encouraging employee carpool and vanpool systems in cooperation with RIDES for Bay Area Commuters by providing a central clearinghouse for car pool and van pool information. This measure would reduce the transportation impacts of the project.

- Secure, safe bicycle storage facilities would be provided relative to the demand generated by the project for commuters and short-term visitors.

- During the construction period, construction truck movement would be permitted only between 9:00 a.m. and 4:00 p.m. to minimize peak-hour traffic conflicts. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering of the Department of Public Works, the Fire Department, Muni and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects. To minimize cumulative traffic impacts due to lane closures and street excavation during construction, the project

sponsor would coordinate with construction contractors for any concurrent nearby projects (such as 456 Montgomery St. and Bank of Canton) that are under construction, planned for construction, or later become known.

- The Commercial St. frontage of the project would include improvements proposed in the San Francisco Center City Pedestrian Circulation and Goods Movement Study to enhance Commercial St. as a pedestrian-oriented street, including decorative striping of the roadway, conformity with no parking on the south side of the street, and sidewalk posts to deter illegal parking./1/ This measure would be carried out in consultation with the Department of Public Works and the Department of City Planning to insure maintenance of adequate pedestrian and vehicle movement conditions. Improvements in the public right-of-way would require approval by the Department of Public Works after a public hearing. The project would include decorative sidewalk paving and street trees along its Commercial St. frontage, in addition to the measures proposed in the Center City Circulation Study. The project sponsor would consult with the Bank of Canton to coordinate design of Commercial St. improvements with those proposed or completed as part of that project.

- The placement of paving, landscaping or structures in the sidewalk area (subject to City approval) would be done in such a way as to minimize interference with pedestrian traffic. Bus shelters would be incorporated into the building site plan providing adequate lighting, seating, garbage receptacles and other such amenities as a newsstand or phone booths, if such structures are consistent with maintenance of adequate pedestrian flows.

- Within a year of full occupancy of the project, the project sponsor would conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for carpools and vanpools. The project sponsor would make this survey available to the Department. This measure would provide needed information to aid in transportation planning within the City. Alternatively, at the request of the Department, the sponsor would provide a fair and equitable in-lieu

contribution toward an overall transportation survey for the downtown area to be conducted by the City.

- While subsurface sidewalk vaults are discouraged, should they be needed, project sponsor would design subsurface sidewalk vaults to allow for possible future widening of adjacent streets and vault design shall be of sufficient strength to carry maximum vehicular live and dynamic loads. Design of the vault area to accommodate street trees could also be made, subject to Department of Public Works approval. In addition, should vaults exist or be installed as part of the project, project sponsor would accommodate and pay for the installation of all subsurface footings, supports and foundations as may be required for future public improvements such as street lights, street trees, trolley wire poles, signs, benches, transit shelters, etc. within project vault areas. Placement of such improvements is entirely within the discretion of the City.

- The project sponsor would, in consultation with the Municipal Railway, install eyebolts or make provisions for direct attachment of eyebolts for Muni trolley wires on the proposed building wherever necessary or agree to waive the right to refuse the attachment of eyebolts to the proposed building if such attachment is done at City expense.

- Building directories and signs for the service elevators would be placed in the loading area.

OTHER MEASURES

- Pacific Gas and Electric Company would coordinate work schedules with other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This would be done through the San Francisco Committee for Utility Liaison on Construction and Other Projects (CULCOP). This measure is outside the jurisdiction of the sponsor and would be implemented by CULCOP.

- The loading area for the project could be redesigned to provide three off-street loading spaces, each 35 ft. in length, in compliance with

City Planning Commission Resolution No. 9286 to mitigate project demand based on the Center City Pedestrian Circulation and Goods Movement Study formula. The sponsor has rejected this measure because the proposed project loading spaces would meet Planning Code requirements, and because provision of three loading spaces would reduce project frontage on Sacramento St. proposed for retail use. The City Planning Commission could require this measure as a condition of project approval.

AIR QUALITY

MEASURE PROPOSED AS PART OF THE PROJECT

- During dry-season excavation, the general contractor would sprinkle unpaved demolition and construction areas with water at least twice a day to hold down dust. This would reduce particulate emissions (dust) by about 50%.

NOISE

MEASURES PROPOSED AS PART OF THE PROJECT

- As recommended by the Environmental Protection Element of the San Francisco Comprehensive Plan, an analysis of noise reduction requirements would be prepared for the project sponsor and recommended noise insulation features would be included as part of the project.

- The construction contract would include a requirement that the contractor muffle equipment so that noise would not exceed limits stated in the City's Noise Ordinance (Article 29, San Francisco Administrative Code, 1972).

- The general contractor would construct barriers around the site, and around stationary equipment such as compressors, to reduce construction noise by as much as five dBA.

- The general contractor would, to the extent possible, locate stationary equipment in pit areas or excavated areas to serve as noise barriers.

- Construction activities would be limited to hours between 7 a.m. and 7 p.m. to reduce disturbance to residents of buildings west of the site.

OTHER MEASURES

- To reduce construction noise effects in offices at 632 Commercial St. (KABL Radio), across the street from the site, office uses in that building fronting the street could be relocated to less exposed areas of the building. Alternatively, the project sponsor could pay for covering the Commercial St. windows with plywood, plastic, glass or gypsum board and for gasketing entry doors during project construction. The construction contractor and project sponsor could establish liaison with the building owner and tenants to schedule project construction activities to reduce noise effects in the office space.

  These measures are under consideration by the project sponsor. The sponsor would make a decision on measures at the start of project construction, in consultation with building owners and tenants of 632 Commercial St. The decision on the measures would be based on the feasibility of relocation of offices within the building, and the potential need to maintain openable windows.

ENERGY

MEASURE PROPOSED AS PART OF THE PROJECT

- The project would be more energy efficient than required by State Administrative Code Title 24. To conserve electric energy, the project would include multiple light-switching; a variable air volume air-conditioning system; an outside-air/return-air economizer cycle; and low-flow plumbing fixtures. A carbon monoxide monitoring system would control garage ventilation, to avoid unnecessary operation of fans.

GEOLOGY, SEISMICITY AND HYDROLOGY

MEASURES PROPOSED AS PART OF THE PROJECT

- A detailed geotechnical report would be prepared by a California-licensed engineer for the project sponsor. The project sponsor and contractor would follow recommendations made in that report regarding project excavation and construction.

- Should dewatering be necessary, the level of the water table and potential settlement and subsidence would be monitored by the general contractor. The City could require a lateral and vertical settlement survey to monitor any movement or settlement of surrounding buildings and adjacent streets during the dewatering. Control lines and benchmarks would be established for monitoring horizontal and vertical movement.

- If, in the judgment of City engineers, unacceptable subsidence were to occur during construction, groundwater recharge would be used to halt the settlement.

- If dewatering were necessary, groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this were found necessary by the Industrial Waste Division of the Department of Public Works. This measure would prevent sediment from entering the storm drain/sewer lines.

UTILITIES AND PUBLIC SERVICES

MEASURE PROPOSED AS PART OF THE PROJECT

- An evacuation and emergency response plan would be developed by project-sponsor or building-management staff, in consultation with the Mayor's Office of Emergency Services, to insure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan

would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance by the Department of Public Works of final building permits.

EMPLOYMENT, HOUSING AND FISCAL FACTORS

MEASURE PROPOSED AS PART OF THE PROJECT

- The project sponsor would mitigate the net housing demand of 270 units generated by the project, through off-site development or rehabilitation of vacant units in San Francisco. This could be accomplished either by direct sponsorship of a housing development or by provision of financial aid to a housing development, as provided for in the City's Office Housing Production Program (OHPP)./2/ The OHPP program allows units or "credits." Credits are given on a two- (or more) for-one basis for moderate- or low-income units. Multiple credits are allowed under the OHPP Guidelines for these units to "promote and stimulate the production of affordable housing" in the face of "economic considerations which dictate that economic incentives be given" for this purpose. The use of credits generally results in fewer units than the demand projected, while the units thus produced tend to be in the lower-income range. The City Planning Commission would determine whether proposed measures would mitigate housing demand caused by the project.

NOTES - Mitigation Measures

/1/ San Francisco Department of City Planning, 1980, Center City Circulation Program: Pedestrian Circulation and Goods Movement, Working Papers 1, 2 and 3, and Final Report.

/2/ Mayor's Office of Housing and Community Development, January 22, 1982, Citywide Affordable Housing Program.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

This chapter identifies impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the proposed project, or other mitigation measures that could be implemented, as described in Section V, Mitigation Measures, pp. 136-144.

CUMULATIVE OFFICE DEVELOPMENT

The project would be part of a trend of denser development in Downtown San Francisco. Cumulative increases in the amount of office space would continue regional growth in service-sector and office headquarters activities and employment. The project would contribute to cumulative traffic increases Downtown and cumulative passenger loadings on Muni, BART, and other transit carriers.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

This chapter identifies alternatives to the proposed project, discusses the environmental impacts associated with these alternatives, and the reasons the alternatives were rejected by the sponsor in favor of the project. Regardless of the sponsor's reasons for rejection, the City Planning Commission could approve an alternative over the proposed project if the Commission believes the alternative were more appropriate for the site.

A. ALTERNATIVE 1: NO PROJECT

DESCRIPTION OF ALTERNATIVE

This alternative would entail no change to the project site as it now exists. All ten buildings currently occupying the site would remain, presumably in substantially the same conditions and uses that exist in 1983 (see Section III, Environmental Setting, pp. 26-47, for a discussion of existing conditions).

DISTINCTIVE ENVIRONMENTAL CHARACTERISTICS OF ALTERNATIVE

With this alternative, the site would remain substantially as described in Section III, Environmental Setting (pp. 26-47). With no project, existing structures on the site would be retained in their current condition. Visual, shadow, and wind effects now attributable to the buildings on the site would remain the same. Current levels of traffic, parking and transit demand; air pollution; noise; energy consumption; on-site employment; and public services demand would continue. Employment, housing and fiscal effects attributable to the project would not occur (see pp. 120-134). This alternative would result in neither the refurbishment of the exteriors of the two buildings proposed in the project to be retained, nor the proposed landscaping of a portion of Commercial St. Eight other buildings on the site would not be demolished.

SPONSOR'S REASONS FOR REJECTION

The project sponsor has rejected this alternative because it would not use the development potential of the site permitted by the Planning Code. The project sponsor has rejected an alternative location in San Francisco or elsewhere in the Bay Area because there are not more centrally located sites that would meet the project sponsor's objectives.

B. ALTERNATIVE 2: NEW CONSTRUCTION COMPLYING WITH THE PROPOSED DOWNTOWN PLAN

Alternative 2 would be a project consistent with the controls proposed in the Downtown Plan, Proposal for Citizen Review, August 1983 (the plan), published by the Department of City Planning, containing proposed new planning regulations for the Downtown. See Section IV.A., pp. 49-52, for a description of the major features of the Downtown Plan related to the project site.

DESCRIPTION OF ALTERNATIVE

This alternative would develop a new structure on most of the site (Lots 5, 6, 6A, 7, 8, 9, 10, 11 and 28; see Figure 38). 653-655 Commercial St., on Lot 27, would be retained. The new building would use the total allowable 10:1 FAR, proposed in the Downtown Plan, or 261,700 gross sq. ft., plus additional floor area available from Transfer of Development Rights (TDR) from other sites in the C-3-O district, for a total new building floor area of 336,740 sq. ft. This would compare with a proposed 337,150 gross sq. ft.

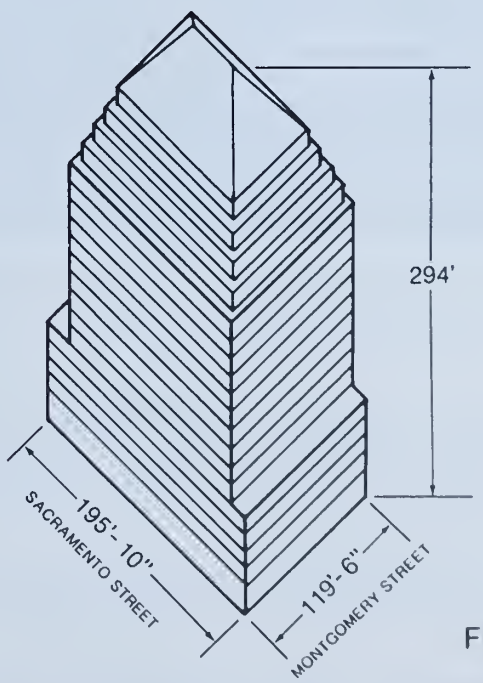


FIGURE 38

Alternative 2:
Downtown Plan Alternative

SOURCE
Skidmore, Owings & Merrill

of new construction for the project. (The plan would permit TDR from sites containing architecturally significant buildings or private open space, if the additional floor area could be accommodated under the plan's height, bulk and other controls for the receiver site.) The alternative would include about 23,000 sq. ft. of ground-floor retail, building service and internal circulation uses, which the plan would exempt from FAR calculations. Total floor area for the alternative would thus be 359,740 gross sq. ft., or an effective FAR of 13.7 (including ground floor space), compared with 366,390 gross sq. ft. and 14:1 FAR for the project.

The plan proposes a height limit for the site of 250 ft. and would permit optional increases in building height: either a 10% increase in the height limit (25 ft. for the site), for reduced building profile and bulk, or additional height for mechanical or penthouse space within the volume formed by planes sloping inward from the outer edge of the roof at a 50-degree angle with the horizontal. The alternative would use the second option for mechanical or usable penthouse space, and would be 294 ft., and 19 stories high, compared with 350 ft. and 26 stories for the project. The plan would control bulk and floor size through Bulk Control Zone Charts A and B (pp. 92-93 of the plan), which relate dimensions to building height. The building would include setbacks on the Montgomery St. and west elevations at the 70 ft. level, and setback floors above 200 ft., to meet these requirements.

Building use would be the same as for the proposed project (office with ground-floor retail uses). This alternative would retain and refurbish the exterior of 653-655 Commercial St. (Lot 27), on the western part of the site.

A comparison of features of this alternative with those of the proposed project is shown in Section IV.A., Table 3, p. 51.

DISTINCTIVE ENVIRONMENTAL CHARACTERISTICS OF ALTERNATIVE

The lower height of this alternative, compared to that of the project, would be less visible in mid- and long-range views, primarily from the west (see Figure 39, p. 150). This alternative would cast shorter shadows than the project. During worst-case conditions in mid-March (and mid-September), the alternative would shade the southerly portion (about 10%) of Portsmouth Square

(1) Bank of Canton (under construction)

(2) Alternative 2: Downtown Plan Alternative

(3) Citicorp Building (under construction)

(4) 580 California (under construction)

(5) Bank of America

FIGURE 39

View of Alternative 2 From Portsmouth Square

SOURCE
Environmental Science Associates, Inc

from about 8 a.m. to 8:30 a.m. (9 a.m. to 9:30 a.m., Daylight Saving Time in mid-September). At the base of the Transamerica Pyramid, with the proposed project, northwesterly wind speeds would be 11.7 mph; existing wind speeds are 12.2 mph./1/ With the alternative, northwesterly wind speeds would also be expected to exceed 11 mph at this location, but would not exceed 14 mph. No other projected wind speeds for this alternative would be expected to exceed the 11 mph comfort criterion./2/

The setbacks at the 70 ft. height on the Montgomery St. and west frontages of the tower in this alternative would relate to building heights of older buildings on Montgomery. and Commercial Sts., including development to the west. The proposed project would not have these setbacks. The alternative would have additional setbacks above the 200-ft. level, compared to the project's tapered profile above the 255-ft. level.

Because this alternative would replace all the low-rise buildings on the project site, except that on Lot 27, with a new building up to 19 stories tall, the alternative would alter the small-scale character of Commercial St., at the street facade, to a somewhat greater extent than the project. The alternative would be lower, overall, than the project.

The plan proposes that Commercial St., between Montgomery and Kearny Sts., be a pedestrian/service street, with improvements (widened sidewalks, sitting areas) in pedestrian areas, or in those portions of the vehicle right-of-way not needed for service, in accordance with the earlier Center City Circulation Study recommendations. The alternative would thus include widened sidewalks and retail uses along the Commercial St. frontage of both the new building and 653-655 Commercial St., proposed to be retained and refurbished. The project similarly proposes widened sidewalks, landscaping and retail uses along its Commercial St. frontage.

The plan would require a 1:50 ratio of building space to open space as part of development in the C-3-O district, or 6,680 sq. ft. for this alternative. No open space is proposed in this alternative. The alternative would meet this requirement through project sponsor funding of development of off-site, public open space land, as allowed by the plan.

The Downtown Plan would require 1% of construction costs to be invested in publicly visible works of art, such as sculpture or murals. The alternative would meet this requirement.

Off-street loading space standards proposed in the plan would require four spaces for this alternative, which would be provided with access from the Sacramento St. frontage, as with the proposed project. The project would include two loading spaces. The plan discourages new long-term parking in the downtown core, limiting new long-term parking facilities to those needed to replace parking eliminated in the core. This alternative would have no parking, compared to 23 spaces for the project.

Demolition of one more existing building for this alternative would displace about 95 more employees than would the proposed project. On the assumption that the floor area per employee would be comparable in the existing and new space, the alternative would result in less net new employment on the site, and less housing demand, than the proposed project, in proportion to the reduced floor area. The alternative floor area would be about 92% of the proposed project floor area (over the whole site), resulting in about 1,100 net new employees and generation of about 245 new households in San Francisco, compared to 270 for the project. The alternative would probably have fiscal effects comparable to those of the proposed project, because the smaller floor area of this alternative would generate lower revenues, and demand proportionately fewer services.

Transportation, circulation, parking, air quality and transportation energy impacts associated with the on-site uses would be proportionately less than those of the proposed project, because the traffic-generating floor area of the alternative would be about 92% of the proposed project floor area.

Construction noise impacts would probably be comparable to those of the proposed project. Energy consumption for operation of the building would be lower with the alternative, because of the greater energy efficiency of new construction compared to that of the existing on-site buildings, and the smaller floor area of the alternative.

SPONSOR'S REASONS FOR REJECTION

The project sponsor has rejected this alternative, because it would demolish an additional low-rise building fronting on Commercial and Sacramento Sts. and would result in greater displacement of existing businesses in site buildings than would the project. The sponsor feels that the proposed project would be a superior design that would be compatible with existing development on Montgomery St. in the Financial District, and would maintain the scale of a portion of Commercial St.

C. ALTERNATIVE 2A: DOWNTOWN PLAN ALTERNATIVE: NO SHADOW ON PORTSMOUTH SQUARE

Alternative 2A would be similar to Alternative 2, above, except that the new building would be 260 ft. and 17 stories tall, compared to 350 ft. and 26 stories for the proposed project, and 294 ft. and 19 stories for Alternative 2. Total gross floor area on the site would be about 322,000 sq. ft. (an FAR of about 12.3:1), compared to a total of 366,390 sq. ft. for the project, and 359,740 sq. ft. for Alternative 2.

The reduced height of this alternative would result in no new shading of Portsmouth Square after 8 a.m. Standard Time (9 a.m. Daylight Saving Time), between March 21 and September 21, the critical times for solar access to the Square proposed in the Downtown Plan. Transportation, air quality, energy, employment and housing impacts associated with this alternative would be proportionately less than with the project, because the total floor area of the alternative would be about 88% of the proposed project floor area. All other effects would be similar to those of the project.

The project sponsor has rejected this alternative for the same reasons described in Alternative 2, above, and because this alternative would not allow development of floor area permitted with Alternative 2 or with the proposed project.

D. ALTERNATIVE 3: PROJECT WITH NO PARKING AND WITH LOADING SPACES CONFORMING TO CITY PLANNING COMMISSION RESOLUTION NO. 9286

DESCRIPTION OF ALTERNATIVE

This alternative would be the same as the proposed project, except that the building would not include 23 basement level parking spaces, and would provide three 35-ft.-long off-street loading spaces, compared to two (one 35-ft. space and one 25-ft. space) with the project.

As no ramp to the basement parking area would be needed, the three loading spaces would use the same 36-ft.-wide curb cut as proposed for the project.

DISTINCTIVE ENVIRONMENTAL CHARACTERISTICS OF ALTERNATIVE

The provision of no on-site parking would respond to San Francisco Master Plan Transportation Element, Downtown Transportation Objective 1, Policy 2, that calls for providing new short-term parking on the periphery of the Downtown core, and discouraging new parking within the core.

Provision of three off-street loading spaces, each 35 ft. in length, would be consistent with criteria of City Planning Commission Resolution No. 9286. The resolution states the intent of the Commission to require, as mitigation, off-street loading spaces based on loading space demand calculation in the Center City Pedestrian Circulation and Goods Movement Study./3/ (See Section IV, Environmental Impacts, pp. 106-108, for a discussion of this calculation.)

The provision of no on-site parking would reduce project-related vehicular traffic near the site that would otherwise be expected to use such parking. This would not change Levels of Service at nearby intersections, from those projected with cumulative development and project traffic. The alternative would increase by 23 parking spaces the theoretical net deficit of 14,800 spaces in and near the Downtown projected with cumulative development.

Availability of three off-street loading spaces would reduce the demand for existing curb loading spaces on the Montgomery St. frontage of the project

site. Space required for the three 35-ft. spaces would slightly reduce available ground-floor retail and lobby space, compared to that of project. All other environmental effects of the alternative would be similar to those of the proposed project.

SPONSOR'S REASONS FOR REJECTION

The project sponsor has rejected this alternative because the lack of on-site parking might affect the sponsor's ability to find tenants requiring parking for tenant visitors and sales and field personnel, and because the proposed parking would incrementally help meet the projected parking deficit in the Downtown area.

The sponsor has also rejected this alternative because the proposed loading spaces in the project would meet existing City Planning Code requirements, and because provision of three, larger spaces would reduce ground-floor retail space.

NOTES - Alternatives

/1/ Bruce White, Ph.D., "Wind-Tunnel Studies of the 505 Montgomery St. Building", April 1983; available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister St., 5th Floor, San Francisco.

/2/ Bruce White, Ph.D., letter, October 22, 1983; available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister St., 5th Floor, San Francisco.

/3/ San Francisco Department of City Planning, 1980, Center City Circulation Program: Pedestrian Circulation and Goods Movement, Working Papers 1, 2 and 3, and Final Report.

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Golden Gate Disposal Company
- Peter Gardella,
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Attn: Darnall W. Reynolds,
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San Francisco Bureau of Building Inspection
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Attn: Robert Levy, Superintendent

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Planning Division
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Director of Property

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1 Embarcadero Center, 23rd Floor
San Francisco, CA 94111

Blayney-Dyett
Urban & Regional Planners
177 Post St., #570
San Francisco, CA 94108
Attn: Michael V. Dyett

Peter Bosselman
Environmental Simulation Laboratory
316 Wurster Hall
Berkeley, CA 94720

Brobeck, Phleger, Harrison
One Market Plaza
San Francisco, CA 94105
Attn: Jonnie T. Jacobs, Esq.

Michael Buck
1333 - 35th Ave.
San Francisco, CA 94122

Campeau Corp. of California
681 Market St.
San Francisco, CA 94105
Attn: Jeff Vance

Dale Carlson
369 Pine St., #800
San Francisco, CA 94104

Chickering & Gregory
3 Embarcadero Center
23rd Floor
San Francisco, CA 94111
Attn: Kent Soule

Chinatown Coalition for Better Housing
615 Grant Ave.
San Francisco, CA 94108

Chinatown Neighborhood Center, Inc.
615 Grant Ave., Second Floor
San Francisco, CA 94108

Chinatown Neighborhood Improvement
Resource Center
615 Grant Ave., Second Floor
San Francisco, CA 94108
Attn: Gordon Chin

Chinatown Transportation Research and
Improvement Program
615 Grant Ave.
San Francisco, CA 94108

Chinese for Affirmative Action
121 Waverly Place
San Francisco, CA 94108
Attn: Henry Der

Chinese American Citizen's Alliance
1044 Stockton St.
San Francisco, CA 94105

Chinese American Institute of Engineers
146 Waverly Place
San Francisco, CA 94108

Chinese Chamber of Commerce
730 Sacramento St.
San Francisco, CA 94108
Attn: George Chinn

Chinese Consolidated Benevolent
Association
843 Stockton St.
San Francisco, CA 94108

Chinese Democratic Club
915A Grant Ave.
San Francisco, CA 94108

Chinese Historical Society
17 Adler St.
San Francisco, CA 94108

Chinese Newcomers Service Center
816 Sacramento St.
San Francisco, CA 94108

Cogswell College Library
600 Stockton Street
San Francisco, CA 94108

Commercial News Publishing Co.
125 Twelfth Street
San Francisco, CA 94103
Attn: Annette M. Granucci

Committee for Better Parks and
Recreation Facilities of Chinatown
920 Sacramento St.
San Francisco, CA 94108
Attn: Beverly Karnatz

Joseph Cortiz
2853 22nd St.
San Francisco, CA 94110

Cushman & Wakefield
555 California, Suite 2700
San Francisco, CA 94104
Attn: Calvin Dare

DKS Associates
1419 Broadway, Suite 700
Oakland, CA 94612

Downtown Association
582 Market St.
San Francisco, CA 94194
Attn: Lloyd Pflueger

Downtown Senior Social Serives
295 Eddy St.
San Francisco, CA 94102

Environmental Impact Planning Corp.
319 Eleventh St.
San Francisco, CA 94103

Environmental Planning & Research, Inc.
649 Front St.
San Francisco, CA 94111
Attn: Leslie de Boer

Charles T. Gill
315 Ivy Street
San Francisco, CA 94102

The Foundation for San Francisco's
Architectural Heritage
2007 Franklin St.
San Francisco, CA 94109
Attn: Grant Dehart, Executive
Director

Friends of the Earth
1045 Sansome St., #404
San Francisco, CA 94111
Attn: Connie Parrish

Annette M. Granucci
Commercial News Publishing Co.
125 Twelfth Street
San Francisco, CA 94103

Gray Panthers
944 Market St.
San Francisco, CA 94102
Attn: W. Nunnally

Gruen, Gruen + Associates
564 Howard St.
San Francisco, CA 94105

Donald Head & Associates
109 Minna Street, #293
San Francisco, CA 94105

Heller, Ehrman, White & McAuliffe
44 Montgomery St., 32nd Floor
San Francisco, CA 94104
Attn: Robert L. Gibney, Jr.

Ms. Sue Hestor
4536 - 20th St.
San Francisco, CA 94114

Carl Imparato
1205 Garfield
Albany, CA 94705

Jefferson Associates, Inc.
683 McAllister Street
San Francisco, CA 94102
Attn: Gordon Jacoby

David Jones
241 Bartlett Ave.
San Francisco, CA 94110

KABL
632 Commercial St.
San Francisco, CA 94111
Attn: William Clark,
Station Manager

Knowlton Realty Ltd.
Suite 2720, Embarcadero Center
San Francisco, CA 94111
Attn: John E. Bonin

Paula Lamb
822 Masonic Ave.
San Francisco, CA 94117

Lee & Fan
Architecture & Planning, Inc.
580 Market St., Suite 300
San Francisco, CA 94104
Attn: Robert Fan, Jr.

League of Women Voters
12 Geary St., Room 605
San Francisco, CA 94108

Legal Assistance to the Elderly
333 Valencia St.
San Francisco, CA 94103
Attn: Brent Kato

Lincoln Property Company
220 Sansome St.
San Francisco, CA 94104
Attn: David Capron

Doug Longear
Finance Department
Coldwell Banker
1 Embarcadero Center, 23rd Floor
San Francisco, CA 94111

Marathon U.S. Realties, Inc.
595 Market Street, Suite 1330
San Francisco, CA 94105
Attn: Rolf Wheeler

Robert Meyers Associates
5826 Balboa Drive
Oakland, CA 94611

Leland S. Meyerzove
KPOO - FM
P.O.Box 6149
San Francisco, CA 94120

Pacific Gas & Electric
77 Beale St., #2429
San Francisco, CA 94104

Kay Pachtner
Consumer Action
1417 Irving St.
San Francisco, CA 94122

Pacific Telephone & Telegraph
140 New Montgomery St.
San Francisco, CA 94105

Pillsbury, Madison & Sutro
PO Box 7800
San Francisco, CA 94120
Attn: Susan Pearlstine

Planning Analysis and Development
530 Chestnut St.
San Francisco, CA 94133
Attn: Gloria Root

Mrs. G. Bland Platt
339 Walnut St.
San Francisco, CA 94118

Charles Hall Page and Associates
364 Bush St.
San Francisco, CA 94104

RB International Services
9 Boston Ship Plaza
San Francisco, Ca 94111
Attn: Rita Dorst

David P. Rhoades
44 Montgomery St., Suite 547
San Francisco, CA 94104

San Francisco Beautiful
41 Sutter St.
San Francisco, CA 94104
Attn: Mrs. H. Klussman, President

San Francisco Building and
Construction Trades Council
400 Alabama St., Room 100
San Francisco, CA 94110
Attn: Stanley Smith

San Francisco Chamber of Commerce
465 California St.
San Francisco, CA 94105
Attn: Richard Morten

San Francisco Convention & Visitors
Bureau
1390 Market St., Suite 260
San Francisco, CA 94102
Attn: George Kirkland

San Francisco Ecology Center
13 Columbus Ave.
San Francisco, CA 94111

San Francisco Forward
690 Market St.
San Francisco, CA 94104
Attn: Frank Noto

San Francisco Junior Chamber of
Commerce
251 Kearny St.
San Francisco, CA 94108

San Francisco Labor Council
3058 - 16th St.
San Francisco, CA 94103
Attn: Bernard Speckman

San Francisco Planning and Urban
Research Association
312 Sutter St.
San Francisco, CA 94108

San Franciscans for Reasonable Growth
88 First St., Room 600
San Francisco, CA 94105
Attn: C. Imparato

San Francisco Tomorrow
88 First St., Room 600
San Francisco, CA 94105
Attn: Mrs. Suzanne Smith

John Sanger & Associates
2340 Market St.
San Francisco, CA 94114

Senior Escort Program
South of Market Branch
814 Mission St.
San Francisco, CA 94100
Attn: Neighborhood Coordinator

Sierra Club
530 Bush St.
San Francisco, CA 94105
Attn: Becky Evans

Kent E. Soule
1180 Filbert Street, Room 204
San Francisco, California 94109

Tenants & Owners Development
Corporation
230 Fourth St.
San Francisco, CA 941035
Attn: John Elberling

Tosta, Browning, and Cincotta
333 Market St., Suite 2230
San Francisco, CA 94105
Attn: Timothy A. Tosta

Steven Weicker
899 Pine St., #1610
San Francisco, CA 94108

Whisler-Patri
590 Folsom Street
San Francisco, CA 94105
Attn: Marie Zeller

LIBRARIES

Institute of Governmental Studies
1209 Moses Hall
University of California
Berkeley, CA 94720

Environmental Protection Agency Library
215 Fremont St.
San Francisco, CA 94105
Attn: Jean Circiello

Hastings College of the Law Library
198 McAllister St.
San Francisco, CA 94102

San Francisco Public Library (2 cc)
Main Branch, Documents Section
208 Larkin St.
San Francisco, CA 94102
Attn: Faith Van Liere

San Francisco Public Library
Business Branch
530 Kearny St.
San Francisco, CA 94104

Government Publications Department
San Francisco State University
1630 Holloway Ave.
San Francisco, CA 94132

Government Documents Section
Stanford University
Stanford, CA 94305

NEIGHBORING PROPERTY OWNERS

Bank of Canton Of California
626 Clay St.
San Francisco, CA 94108

Chinese Community Housing Corp.
615 Grant Ave.
San Francisco, CA 94108

David S. Chu
2316 15th Ave.
San Francisco, CA 94116

Dortmunder Financial Company
c/o Golden Crest Properties
3410 Geary St., #314
San Francisco, CA 94118

Paul B. Fay, Jr.
c/o Fay Improvment Co.
3766 Clay St.
San Francisco, CA 94118

Kam Chan Overseas Inc.
c/o Lew & Fong
626 Grant Ave., #202
San Francisco, CA 94104

The Lurie Company
555 California St., #5100
San Francisco, CA 94104

Harriet E. Redinger
615 Sacramento St.
San Francisco, CA 94111

Walter Rupp
c/o Peter Wertheimer
5 Third St.
San Francisco, CA 94103

Utah International Inc.
550 California St.
San Francisco, CA 94108

Yok Jun Wong
1374 Pacific Ave.
San Francisco, CA 94109

MEDIA

San Francisco Bay Guardian
2700 19th St.
San Francisco, CA 94110
Attn: Patrick Douglas, City Editor

San Francisco Chronicle
925 Mission St.
San Francisco, CA 94103
Attn: Marshall Kilduff

San Francisco Examiner
110 5th St.
San Francisco, CA 94103
Attn: Gerald Adams

San Francisco Progress
851 Howard St.
San Francisco, CA 94103
Attn: Mike Mewhinney

The Sun Reporter
1366 Turk St.
San Francisco, CA 94115

Tenderloin Times
146 Leavenworth Street
San Francisco, CA 94102
Attn: Rob Waters

X. APPENDICES

DEPARTMENT OF CITY PLANNING 450 McAllister St. - 5th Floor
(415)558-5260

NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: January 7, 1983

Lead Agency: City and County of San Francisco, Department of City Planning
450 McAllister St. - 5th Floor, San Francisco CA 94102

Agency Contact Person: Carol Roos Tel: (415) 558-5260

Project Title: 82.463E: 505 Montgomery Street Office Building

Project Sponsor: The Empire Group

Project Contact Person: Martin E. Brown

Project Address: 505 Montgomery Street

Assessor's Block(s) and Lot(s): Lots 5, 6, 6A, 7, 8, 9, 11, 27 and 28 in Assessor's Block 227

City and County: San Francisco

Project Description: Retention of three buildings at 638-640 Sacramento St.: 653-655 Commercial St.; and 627-629 Commercial St. Demolition of six buildings; construction of a 28-story, 416-foot-tall building including about 309,184 gross sq. ft. of office; 10,000 sq. ft. of retail, 70 parking spaces, with loading facilities off Sacramento St. Buildings to be demolished include 501-505Montgomery St. (610 Sacramento St.);519 and 527 Montgomery St; 618 and 624 Sacramento St; and 615 Commercial St.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Initial Evaluation (initial study) for the project, which is on file at the Department of City Planning:

Please see the attached Initial Study.

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: January 17, 1983.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $35.00 filing fee.

Alec S. Bash

Alec S. Bash, Environmental Review Officer

INITIAL STUDY
505 MONTGOMERY STREET
82.463
January 7, 1983

I. PROJECT DESCRIPTION

The Empire Group proposes to construct a 28-story office building on a 24,911-sq.-ft. site in Assessor's Block 227 fronting on Montgomery, Sacramento, and Commercial Sts (see Figure 1, p. 3). An office tower would be constructed on a 13,200-sq.-ft. portion of the site (Lots 5, 6, 6A, 7, 8 and 9). The remaining 11,711 sq. ft. of the site (Lots 11, 27 and 28) contains three buildings that would be retained. The project description in this Initial Study is based on use of the development rights associated with the latter lots for development on the former lots. The project site is on the block bounded on the north by Clay St., on the south by Sacramento St., on the west by Kearny St. and on the east by Montgomery St, and split by Commercial St.

The nine buildings on the site contain retail, banking, restaurant and office uses. Six of these buildings, described as follows, would be demolished: Lot 5 at the corner of Montgomery and Commercial Sts. is occupied by a two-story building which contains a restaurant on the ground floor and offices on the second floor. Lot 6A is a two-story building which contains a graphic artist studio and a bar. Lot 7 at the corner of Montgomery and Sacramento is occupied by a four-story building containing a restaurant, bank, optician, and offices. Lot 8 at 618 Sacramento St. is occupied by a three-story building which contains a restaurant on the ground floor and offices on upper floors. Lot 9 at 624 Sacramento St. is two stories and is occupied by a restaurant. Lot 6 at 615 Commercial St. is occupied by a two-story building containing a hair salon and offices.

The project site is zoned C-3-O (Downtown Office); Lots 5, 6, 6A, 7, 8, 9 and 28 are in a 400-I Height and Bulk district and Lots 11 and 27 are in a 320-I Height and Bulk district. The total allowable floor area ratio (FAR) for the site is 14:1, making the total allowable floor area for the entire site 348,754 gross sq. ft. Buildings that would remain in the site have a floor area of approximately 29,400 gross sq. ft., and the proposed building would have a floor area of 319,184 gross sq. ft., for a total project site floor area of 348,584 gross sq. ft.

The 28-story building would be 416 ft. high, consisting of a stepped back tower and a 16 ft. mechanical penthouse (see Figure 2, p. 4). The tower would include 309,184 gross sq. ft. of office space and about 10,000 gross sq. ft. of retail space at ground level. Up to 70 on-site parking spaces would be provided. Off-street loading facilities would be provided with access from Sacramento St. The office entrance to the building would be on Montgomery St.

II. SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS

A. EFFECTS FOUND TO BE POTENTIALLY SIGNIFICANT

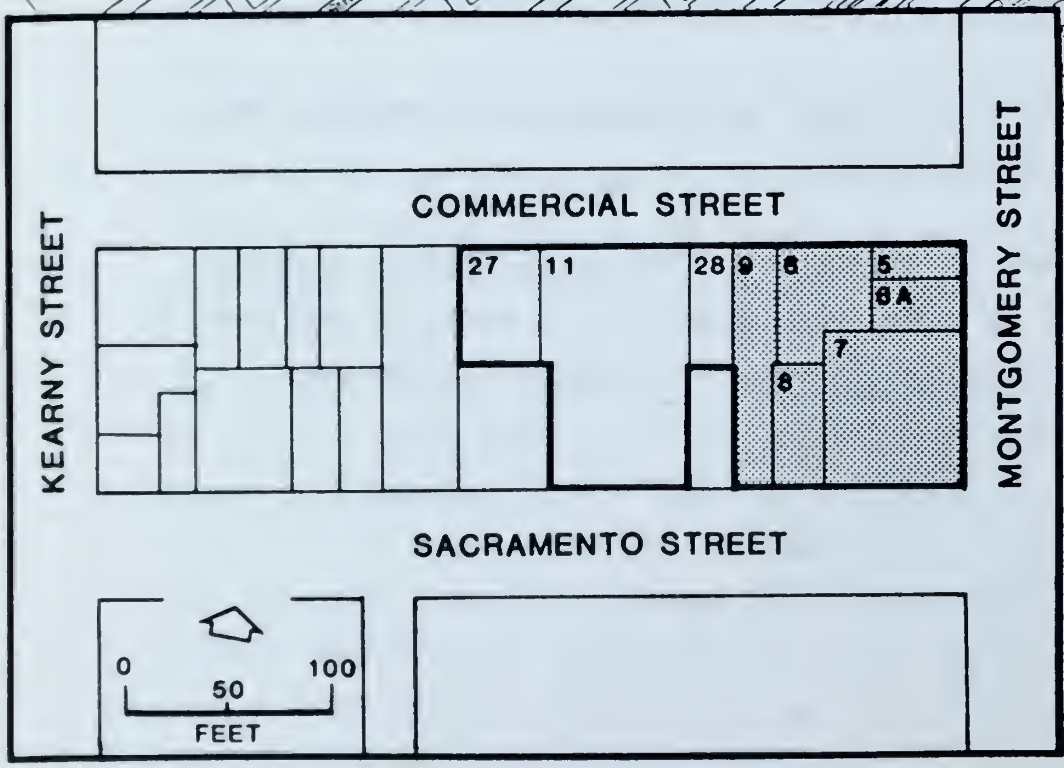
The 505 Montgomery St. project is examined in this Initial Study to identify its potential effects on the environment. Some effects have been determined to be potentially significant. Potential impacts which require further analysis in an EIR include urban design factors, wind and shadows; visual quality and views affected by the project; housing demand generated by the project; effects on transportation and circulation; noise impacts during construction; cumulative air quality impacts; and energy demand.

B. EFFECTS FOUND NOT TO BE SIGNIFICANT

Some potential environmental effects would either be insignificant or would be mitigated through measures incorporated into the project design. These require no further environmental analysis. They include:

Land Use Compatibility: The project would be consistent with existing and proposed land uses in the C-3-O district.

Noise: After completion, project operation would not perceptibly increase noise levels in the project vicinity. Operational noise would be regulated by the San Francisco Noise Ordinance and the Noise Guidelines of the San Francisco Comprehensive Plan.

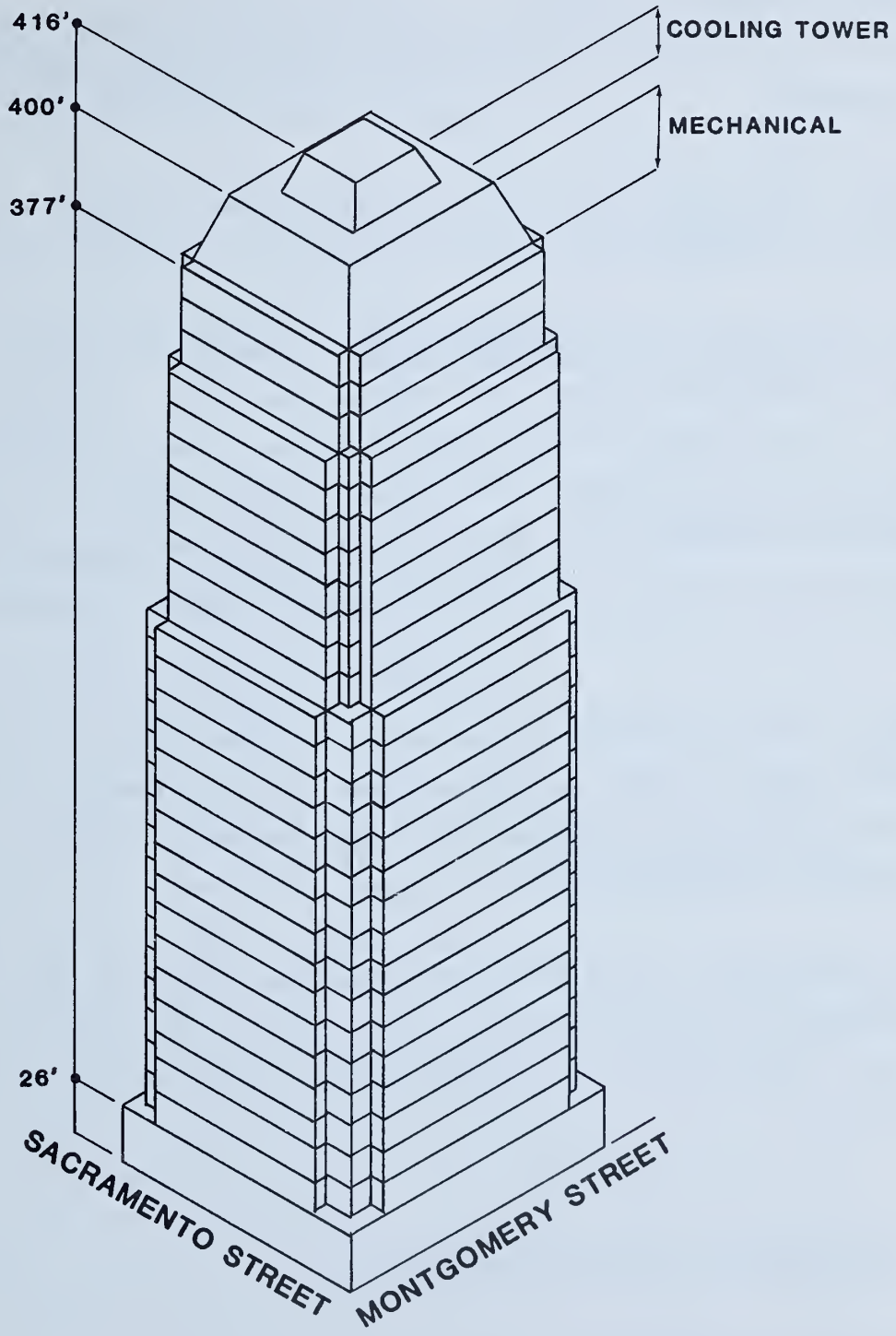


ABOVE:
PROJECT LOCATION

LEFT:
PROJECT SITE
LOTS TO BE DEVELOPED WITH NEW CONSTRUCTION

FIGURE 1: SITE LOCATION

SOURCE: ENVIRONMENTAL SCIENCE ASSOCIATES, INC.



SOURCE: SKIDMORE, OWINGS & MERRILL

FIGURE 2: PROJECT ELEVATION

Air Quality During Construction: The project sponsor has agreed to a mitigation measure (see p. 18) which would decrease particulates and emissions from construction equipment during the construction period.

Utilities and Public Services: Increased demand for public services and utilities attributable to the project would not require additional personnel or equipment.

Biology: The project would have no direct effect on plant or animal life. The site is presently occupied by buildings.

Land (topography, soils, geology)/Water: Underlying materials would provide adequate foundation support and seismic stability. A detailed geotechnical report, to be prepared for the project sponsor, would determine the need for dewatering or pile driving. The project sponsor would follow the recommendations made in the geotechnical report, for any excavation or construction on the site and would incorporate other mitigation measures on p. 19.

Hazards: The site and the project would neither cause nor be affected by hazardous uses or health hazards. See p. 19 for a measure to be implemented to ensure coordination between the City's emergency planning activities and the project's emergency plan.

Cultural Resources: No significant subsurface resources are expected to be encountered during construction. See p. 19 for a mitigation measure that would be implemented by the project sponsor to protect any potential resources on the site.

III. ENVIRONMENTAL EVALUATION CHECKLIST

A. GENERAL CONSIDERATIONS

	Yes	Maybe	No	N/A	Disc.
1. Would the project conflict with objectives and policies in the Comprehensive Plan (Master Plan) of the City?		X			

	Yes	Maybe	No	N/A	Disc.
2. Would the project require a variance, or other special authorization under the City Planning Code?			X		
3. Would the project require approval of permits from City Departments other than the Department of City Planning or the Bureau of Building Inspection, or from Regional, State or Federal Agencies?			X		
4. Would the project conflict with adopted environmental plans and goals?		X			

The above matters require discussion in the project EIR.

B. ENVIRONMENTAL IMPACTS

	Yes	Maybe	No	N/A	Disc.
1. Land Use. Would the proposed project:					
a. Be different from surrounding land uses?			X		X
b. Disrupt or divide the physical arrangement of an established community?			X		X

The project site is located in the northwest portion of the San Francisco Financial District. The northern boundary of the Financial District is Washington St., two blocks north of the project site, and the western boundary is Kearny St., one block west of the project site.

Banking and office uses predominate along Montgomery St. north and south of the project site. The Financial District includes much of the City's recent office development, generally with retail at ground level. The Transamerica Pyramid and the 601 Montgomery St. building are located one block to the northeast and one block north of the site, respectively. The 456 Montgomery St. building is under construction diagonally accross the street from the site. The Bank of Canton building is approved for development just north (across Commercial St.) of the project. All of these buildings presently contain or would contain office uses along with some retail uses. Commercial St. in the project block contains mixed-use development with ground floor retail uses and office or residential uses on upper floors. The project area east of the site is generally more intensively developed than the area to the west.

The project would be similar in use to surrounding land uses and would not disrupt the physical arrangement of an established community.

This topic will not be discussed in the project EIR. Scale of the development is mentioned below.

2. Visual Quality and Urban Design. Would the proposed project:	Yes	Maybe	No	N/A	Disc.
a. Obstruct or degrade any scenic view or vista open to the public?		X			X
b. Reduce or obstruct views from adjacent or nearby buildings?	X				X
c. Create a negative aesthetic effect?		X			X
d. Generate light or glare affecting other properties?			X		X

A building of this size could obstruct views, reduce views from nearby buildings, or create a negative aesthetic effect. The proposed 28-story building would be similar in scale to new high-rise office development in the Finacial District and taller than development west of the site which consists primarily of low-scale buildings. No highly reflective, mirrored glass would be used in the project. These matters will be discussed in the project EIR.

3. Population/Employment/Housing. Would the proposed project:	Yes	Maybe	No	N/A	Disc.
a. Alter the density of the area population?	X				X
b. Have a growth-inducing effect?		X			X
c. Require relocation of housing or businesses, with a displacement of people, in order to clear the site?	X				X
d. Create or eliminate jobs during construction and operation and maintenance of the project?	X				X
e. Create an additional demand for housing in San Francisco?	X				X

Provision of new office space would increase daytime density of the area population, might induce growth and would be expected to create a housing demand. Present businesses located on the lots proposed for construction would be displaced. It has not yet been determined if remaining site buildings would be rehabilitated or remodeled; if they were rehabilitated or remodeled, there would be additional displacement of businesses. No housing is located on the site. These matters will be discussed in the project EIR.

	Yes	Maybe	No	N/A	Disc.
4. Transportation/Circulation. Would the construction or operation of the project result in:					
a. Change in use of existing transportation systems?	X				X
b. An increase in traffic which is substantial in relation to existing loads and street capacity?		X			X
c. Effect on existing parking facilities, or demand for new parking?	X				
d. Alteration to current patterns of circulation or movement of people and/or goods?			X		X
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?			X		
f. A need for maintenance or improvement or change in configuration of existing public roads or facilities?			X		
g. Construction of new public roads?			X		X

Increased employment at the site would increase demand on existing public and private transportation systems. The project would generate approximately 900 peak-hour trips and 4,600 daily trips. Project-related impacts and cumulative transportation and circulation impacts will be analyzed and described in the project EIR. No new public roads would be constructed as a result of the project.

5. Noise.	Yes	Maybe	No	N/A	Disc.
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area?	___	___	X	___	X
b. Would existing noise levels impact the proposed use?	___	___	X	___	X
c. Are Title 25 Noise Insulation Standards applicable?	___	___	X	___	X

Project Construction

Project construction would require about 22 months and would involve demolition, site grading and construction of the proposed structure. Residential hotels and a radio station are located nearby. Construction noise impacts will be analyzed in the project EIR.

Project Operation

The noise environment of the site, like all of downtown San Francisco, is dominated by vehicular traffic noise. The Environmental Protection Element of the San Francisco Comprehensive Plan indicates a day-night average noise level (Ldn) of 75 dBA on Montgomery and Sacramento Sts. adjacent to the site in 1974./1,2/ The Environmental Protection Element contains guidelines for determining the compatibility of various land uses with different noise environments. For office uses the guidelines recommend no special noise control measures in an exterior noise environment up to an Ldn of 70 dBA. For the 75 dBA noise level, the guidelines recommend an analysis of noise reduction requirements and inclusion of noise insulation features in the building design. The project sponsor has indicated that noise insulation measures would be included as part of the design (see p. 20). The proposed structure would not include housing, so Title 25 Noise Standards would not be applicable.

Project operation would not result in noise levels greater than those presently existing in the area. The amount of traffic generated by the project during any hour of the day, and cumulative traffic increases at the

time of project completion, would cause traffic noise levels to increase by less than one dBA. To produce a detectable increase in environmental noise, a doubling of existing traffic volume would be required; traffic increases of this magnitude would not occur with anticipated cumulative development.

Mechanical equipment noise is regulated by the San Francisco Noise Ordinance, San Francisco Municipal Code, Section 2909, "Fixed Source Noise Levels," with which the project sponsor would be required to comply. The project site and surrounding area are zoned C-3-O. In this zone, the ordinance limits equipment noise levels at the property line to 70 dBA between 7 a.m. and 10 p.m. and 60 dBA between the hours of 10 p.m. and 7 a.m. During lulls in traffic, mechanical equipment generating 70 dBA could dominate the noise environment at the site. The project engineer and architect would include design features in the building to limit mechanical equipment noise levels to 60 dBA. As equipment noise would be limited to 60 dBA to meet the nighttime limit, it would not be perceptible within the sound-level context of the project. Further discussion of operational noise will not be included in the EIR.

NOTES - Noise

/1/ dBA is a measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to various frequencies of sound.

/2/ Ldn, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises; noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

	Yes	Maybe	No	N/A	Disc.
6. Air Quality/Climate. Would the proposed project result in:					
a. Violation of any ambient air quality standard or contribution to an existing air quality violation?		X			X
b. Exposure of sensitive receptors to air pollutants?			X		

	Yes	Maybe	No	N/A	Disc.
c. Creation of objectionable odors?	___	___	X	___	___
d. Burning of any materials including brush, trees, or construction materials?	___	___	X	___	___
e. Alteration of wind, moisture or temperature (including sun shading effects), or any change in climate, either locally or regionally?	X	___	___	___	X

Air quality data collected by the Bay Area Air Quality Management District (BAAQMD) at its San Francisco monitoring station shows that San Francisco infrequently exceeds the ambient air quality standards for ozone, carbon monoxide, and total suspended particulates. Climatic conditions in San Francisco allow rapid dispersal of air pollutants, so that local stationary sources of emissions rarely create a measurable impact at monitoring stations.

Project Construction

Demolition, grading and other construction activities would affect local air quality for approximately 22 months, causing a temporary increase in particulate dust and hydrocarbon emissions. These emissions would be carried by prevailing winds (west, northwest and southwest) and probably would not cause emission standards to be exceeded at the monitoring station (located about 2.5 miles south of the project site). Without mitigation, construction-generated dust might cause exceedances of the particulate standard in the immediate project area. Dustfall may occur on surfaces within 200 to 800 ft. of the project site under low wind conditions. Blowing dust could be an annoyance in the vicinity of the site with winds exceeding 12 miles per hour. Construction dust is composed primarily of large particles that settle out of the atmosphere more rapidly with increasing distance from the source. Dust is more of a nuisance than a health hazard, except to sensitive receptors such as persons with respiratory diseases. The project sponsor would require the project contractor to wet down the construction site twice a day during construction to reduce particulates by at least 50%.

Diesel-powered construction equipment would emit, in decreasing order by weight, nitrogen oxides, carbon monoxide, sulfur oxides, hydrocarbons, and particulates. This would increase local concentrations temporarily but would not be expected to increase the frequency of exceedances of air quality standards. The project sponsor would require the project contractor to maintain and operate construction equipment in such a way as to minimize exhaust emissions. Although ambient concentrations of these pollutants would be increased for the duration of the construction period, no increases in measured concentrations at the 23rd Street monitoring station are expected to occur.

Because of the mitigation measure on p. 18 construction air quality impacts will not be discussed in the EIR.

Project Operation

Project and cumulative air quality impacts and local wind and shadow effects will be described in the project EIR.

7. Utilities and Public Services. Would the proposed project have an effect upon, or result in a need for new or altered, governmental services in any of the following?	Yes	Maybe	No	N/A	Disc.
fire protection			X		X
police protection			X		X
schools			X		X
parks or other recreational facilities			X		X
maintenance of public facilities			X		X
power or natural gas			X		X
communications systems			X		X
water			X		X
sewer/storm water drainage			X		X
solid waste collection and disposal			X		X

Fire Protection: Water supply and pressure in the vicinity are adequate to suppress fire. Minimum emergency response time from the three fire stations serving the site would be less than four minutes. No additional personnel or

equipment would be required due to project development./1/ The project would incorporate all emergency response systems stipulated by the Life Safety Code, including fire alarms, an emergency communication system, emergency power supply and emergency water supply. These measures would reduce hazards to building occupants during an earthquake or fire.

Police Protection: The area is currently served by 24-hour patrol cars originating from Central Station; there is no foot beat. Response time to the site is 4 minutes for priority calls The project is would not generate a need for additional police services./2/

Schools: The project would not affect area schools. San Francisco Public schools have experienced a reduction in enrollment over the past several years and could accomodate any increase in school-age children generated from an increase in population as a result of the project./3/

Parks: Project employees could increase the midday use of Portsmouth Square, one block west of the site; Redwood Park, one block northeast of the site and/or other open space in the Downtown area, but would not cause a need for additional personnel or maintenance.

Public facilities: The project would have no direct effect on the maintenance of public facilities.

Power or natural gas: Gas and electricity would be provided by Pacific Gas and Electric Company (PG&E). Depending upon demand of the project, it may be necessary for PG&E to install new connection facilities./4/ Project energy consumption will be discussed in the EIR.

Communications: Pacific Telephone would provide phone service to the project and anticipates no problem in meeting demand of the project. Conduit would have to be extended under Montgomery St. from south of Sacramento St. to connect to existing facilities./5/

Water: The proposed project would generate a demand for approximately 31,250 gallons of water per day. Existing 8-inch water mains on Montgomery, Sacramento, or Commercial Sts. would serve the project. The San Francisco Water Department would be able to meet project-generated demand./6/

Sanitary Sewer: The project would also generate about 31,250 gallons per day of dry-weather wastewater flows. Wastewater from the site would flow through 3-ft. by 5-ft. brick sewers under Montgomery, Sacramento or Commercial Sts. to the North Point Treatment Plant for primary treatment and later would be transported to the Southeast Plant for secondary treatment. San Francisco wastewater facilities have adequate capacity to serve this project./7/

Solid Waste Disposal: The project would generate an estimated 320 pounds of solid waste per day. Golden Gate Disposal Company serves the site and anticipates no problems in meeting collection demand./8/

All utilities and public services could serve the project with existing capacity; this topic will not be discussed in the project EIR.

NOTES - Utilities and Public Services

/1/ Edward J. Phipps, Assistant Chief, Support Services, San Francisco Fire Department, letter communication, October 22, 1982.

/2/ James P. Shannon, Deputy Chief of Police, Administrative Bureau, San Francisco Police Department, letter communication, November 19, 1982.

/3/ San Francisco Unified School District, Proposal for Leasing and Selling Vacant Property, April 29, 1980, pp. 28 and 29.

/4/ D. J. Cardner, Industrial Power Engineer, Pacific Gas & Electric Company, letter communication, November 12, 1982.

/5/ W. Ottens, Engineer, Pacific Telephone, letter communication, October 25, 1982.

/6/ Harlow Swain, Senior District Water Serviceman, San Francisco Water Department, letter communication, October 25, 1982.

/7/ Nathan Lee, San Francisco Clean Water Program, letter communication, October 27,1982.

/8/ Peter Gardella, Vice President, Golden Gate Disposal Company, telephone communication, October 20, 1982.

	Yes	Maybe	No	N/A	Disc.
8. Biology.					
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?	___	_____	X	___	X

	Yes	Maybe	No	N/A	Disc.
b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?			X		
c. Would the project require removal of mature scenic trees?			X		

The site is completely covered with impervious surfaces. The project would not affect any plant or animal habitat. This topic will not be discussed in the project EIR.

	Yes	Maybe	No	N/A	Disc.
9. Land. (topography, soils, geology) Would the proposed project result in or be subject to:					
a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site (slides, subsidence, erosion and liquefaction)?			X		X
b. Grading (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops)?	X				X
c. Generation of substantial spoils during site preparation, grading, dredging or fill?			X		

The site is just west (on the shore side) of the 1852 shoreline as shown on U.S. Coast Survey maps. The site elevation is about 14 ft. above sea level at Montgomery St. and rises to about 20 ft. above sea level at the west property line of the full project site. Based on boring data for adjacent sites, subsurface conditions are expected to consist of a small amount of sandy fill overlying dense sand and stiff to hard clay. Settlement would not be expected to be a potential geologic hazard./1/

Groundshaking is expected to be "strong" on the site for a major earthquake of the 1906 type./1/ The project would be constructed under the supervision of structural and geotechnical engineers and would comply with all applicable seismic and life safety standards.

It has not been determined if pile driving for the building foundation would be necessary. A complete geotechnical study would be prepared for the project by a California-licensed engineer; the project sponsor would follow the recommendations of the study. This topic will not be discussed in the project EIR.

NOTE - Land

/1/ Dames and Moore, Preliminary Geotechnical Study, 505 Montgomery St. Project, November 1, 1982.

	Yes	Maybe	No	N/A	Disc.
10. Water. Would the proposed project result in:					
a. Reduction in the quality of surface water?			X		X
b. Change in runoff or alteration to drainage patterns?			X		X
c. Change in water use?	X				X
d. Change in quality of public water supply or in quality or quantity (dewatering) of groundwater?		X			X

All site runoff would drain into the City's combined sanitary and storm sewage system. Because the site is now covered with impervious surfaces, no change in the amount of runoff or in drainage patterns is expected. The project would increase water use on the site from 5,000 to approximately 31,250 gallons per day. The San Francisco Water Department would be able to meet this demand./1/ No water bodies, springs, or water courses are located on the site. If excavation were to extend below groundwater level, dewatering would probably be necessary; the quantity and rate of flow is expected to be minimal. A complete geotechnical report would be prepared by a California - licensed engineer during the design of the project, and would include information on groundwater levels and flows.

It has not been determined if dewatering would be necessary. If dewatering were necessary the project would include the mitigation measures on p. 19. This topic will not be discussed in the project EIR.

NOTE - Water

/1/ Harlow Swain, Senior District Water Serviceman, San Francisco Water Department, letter communication, October 25, 1982.

11. Energy/Natural Resources. Would the proposed project result in:	Yes	Maybe	No	N/A	Disc.
a. Any change in consumption of energy?	X				X
b. Substantial increase in demand on existing energy sources?			X		
c. An effect on the potential use, extraction, conservation or depletion of a natural resource?		X			

Project construction and operation would increase energy consumption derived from non-renewable resources. Energy consumption will be discussed in the project EIR.

12. Hazards. Would the proposed project result in:	Yes	Maybe	No	N/A	Disc.
a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety?			X		
b. Creation of or exposure to a potential health hazard?			X		
c. Possible interference with an emergency response plan or emergency evacuation plan?			X		X

The project would increase the daytime population in downtown San Francisco. Employees in the proposed building would contribute to congestion if an emergency evacuation of the Downtown area were required. Because of the mitigation measure proposed as part of the project as noted on p. 19, this topic will not be discussed in the project EIR.

13. Cultural. Would the proposed project:	Yes	Maybe	No	N/A	Disc.
a. Include or affect an historic site, structure or building?	X				X
b. Include or affect a known archaeological resource or an area of archaeological resource potential?			X		
c. Cause a physical change affecting unique ethnic or cultural values?			X		

Because buildings presently occupy the site there is little chance that any historic or prehistoric artifacts would be found on the site during construction. Archaeology will not be discussed in the EIR because the project sponsor has proposed the mitigation measure on p. 19 regarding archeological resources.

The building located at 527 Montgomery St., on Lot 5 of Assessor's Block 227, has been rated "C", for contextual importance, (on a scale of "A" - highest to "D" - lowest) in an architectural survey conducted by the Foundation for San Francisco's Architectural Heritage. The building was not rated in a similar survey conducted by the Department of City Planning in 1976. There have been several alterations to the building since it was originally constructed. The building would be demolished as a result of the project. This topic will be discussed in the EIR.

C. MITIGATION MEASURES

	Yes	No	Disc.
Are mitigation measures included in the project?	X		X
Are other mitigation measures available?	X		

Mitigation measures currently proposed as part of the project are listed below. These measures, and possibly others, will be included in the EIR.

- The project sponsor would require the general contractor to wet down demolition and construction areas at least twice a day to reduce dust generation by approximately 50%.

- A detailed geotechnical report will be prepared by a California - lisensed engineer for the project sponsor. The project sponsor and contractor would follow recommendations made in that report regarding project construction.

- Should dewatering be necessary, the level of the water table and potential settlement and subsidence would be monitored by the general contractor. The City could require a lateral and settlement survey to monitor any movement or settlement of surrounding buildings and adjacent streets during the dewatering. Control lines and benchmarks would be established for monitoring horizontal and vertical movement.

- If, in the judgement of City engineers, unacceptable subsidence were to occur during construction, groundwater recharge would be used to halt the settlement.

- If dewatering were necessary, groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this were found necessary by the Industrial Waste Division of the Department of Public Works, to prevent sediment from entering the storm drain/sewer lines.

- An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to insure coordination between the City's emergency planning activities and the project's plan. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building occupancy permits.

- Should evidence of historic or prehistoric artifacts be uncovered at the site during construction, the sponsor would agree: 1) to require the project contractor to notify the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board; 2) to require that the contractor suspend construction in the area of the discovery for a maximum of four weeks to permit review of the find and, if appropriate, retrieval of artifacts; 3) for an archaeologist or historian or other expert acceptable to the Environmental Review Officer to help the Office

of Environmental Review determine the significance of the find and identify feasible measures, if any, to preserve or recover artifacts; and 4) to implement archaeological mitigation measures which would be consistent with Assembly Bill 952.

- As recommended by the Environmental Protection Element of the San Francisco Comprehensive Plan, an analysis of noise reduction requirements would be prepared for the project sponsor and recommended noise insulation features would be included as part of the project.

D. ALTERNATIVES

	Yes	No	Disc.
Were other alternatives considered?	X		X

Several alternatives to the project are under consideration. These alternatives will be discussed in the project EIR.

Alternative 1, No Project: This alternative would retain the site in its present condition.

Alternative 2, New Construction on Total Project Site: This alternative would consist of a shorter, bulkier building, with approximately 348,700 gross sq. ft. of new development.

Alternative 3, Office Building Complying with GDD: This alternative would be an office building consistent with the controls recommended by Guiding Downtown Development, July 1982. The building would have a height of 200 feet and contain no on-site parking spaces. Gross floor area would be approximately 300,000 sq. ft. A sub-alternative would include residential use as part of the new building.

E. MANDATORY FINDINGS OF SIGNIFICANCE

	Yes	No	Disc.
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?		X	

	Yes	No	Disc.
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable?	X	___	X
4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___
5. Is there a serious public controversy concerning the possible environmental effect of the project?	___	X	___

The project might contribute to the effects of cumulative development on housing demand, transportation systems, air quality, and energy demand. These items will be discussed in the project EIR.

On the basis of this initial evaluation:

____ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

____ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers____, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

✓ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Robert W. Passmore
Assistant Director-Implementation

for

Dean Macris
Director

Date: 1/4/83

APPENDIX B: ARCHITECTURAL RESOURCES

ARCHITECTURAL EVALUATION SURVEYS

The architectural ratings discussed in the text of this report (see Section III.B. Environmental Setting, pp. 29-32 and Figure 11, pp. 30) represent the results of two separate architectural surveys.

SAN FRANCISCO DEPARTMENT OF CITY PLANNING INVENTORY

Between 1974 and 1976, the San Francisco Department of City Planning conducted a citywide inventory of architecturally significant buildings. An advisory review committee of architects and architectural historians assisted in the final determination of ratings for the 10,000 buildings, the results of which were entered in an unpublished 60-volume record of the inventory. The rated buildings are also represented on a set of color-coded maps which identify the location and relative significance of each building surveyed. The inventory and maps are on file at the Department of City Planning.

The inventory assessed the architectural significance of the surveyed structures from the standpoint of overall design and particular design features. Both contemporary and older buildings were included, but historical associations were not considered. Each building was given two numerical ratings, for architectural quality and for overall architectural significance, urban design context, and environmental significance. The latter rating is referred to in this report. The ratings ranged from a low of "0" to a high of "5". The architectural survey resulted in a listing of the best 10% of San Francisco's buildings. In the estimation of the inventory participants, buildings rated "3" or higher represent approximately the best 2% of the City's architecture. A full description of the survey rating system is available at the Department of City Planning, 450 McAllister St.

HERITAGE SURVEY

The Foundation for San Francisco's Architectural Heritage, through its consultants, Charles Hall Page & Associates, Inc., conducted an architectural and historical survey of all downtown structures. In 1979, the original inventory results were published in the book Splendid Survivors (Foundation for San Francisco's Architectural Heritage, Splendid Survivors, California Living Books, San Francisco, 1979). A subsequent 1982 Heritage survey evaluated all structures in the C-3 zoning districts in areas not covered in the Splendid Survivors survey ("San Francisco Downtown Architectural Survey: C-3 Zoning District, Final Evaluated List", December 1, 1982). The expanded inventory has not been formally published by Heritage. Criteria considered in rating the buildings for both surveys include Architectural Significance, Historic Context and Negative Alterations. Summary ratings from "A" to "D" were assigned to each building on the basis of these scores. The summary ratings, as described on pp. 12-13 of Splendid Survivors, are listed below:

A. "Highest Importance. Individually the most important buildings in downtown San Francisco, distinguished by outstanding qualities of architecture, historical values, and relationship to the environment.

All A-group buildings are eligible for the National Register, and of highest priority for City Landmark status."

B. "Major Importance. Buildings which are of individual importance by virtue of architectural, historical, and environmental criteria. These buildings tend to stand out for their overall quality rather than for any particular outstanding characteristics. B-group buildings are eligible for the National Register, and of secondary priority for City Landmark status."

The Landmarks Preservation Advisory Board does not distinguish between "A" rated and "B" rated buildings for purposes of preservation.

C. "Contextual Importance. Buildings which are distinguished by their scale, materials, compositional treatment, cornice and other features. They provide the setting for more important buildings and they add visual richness and character to the downtown area. Many C-group buildings may be eligible for the National Register as part of historic districts."

D. "Minor or No Importance. Buildings which are insignificant examples of architecture by virtue of original design, or more frequently, insensitive remodeling. This category includes vacant buildings and parking lots. Most D-group buildings are sites of opportunity."

Not Rated. Buildings which have been built or suffered insensitive exterior remodelings since 1945.

ARCHITECTURALLY AND/OR HISTORICALLY SIGNIFICANT BUILDINGS IN THE DOWNTOWN

The City Planning Commission adopted by Resolution No. 8600 (May 29, 1980), a "List of Architecturally and/or Historically Significant Buildings in The Downtown," based on the above described surveys. Generally, buildings rated "3" or higher in the DCP survey or "A" or "B" in the original Heritage survey (Splendid Survivors) were placed on the list. The expanded Heritage survey (1982) has not been adopted by the City Planning Commission to date.

The purpose of the list is to advise developers and building owners of the importance the City places upon the buildings' conservation and to require special review by the Commission of any plans which would affect any building or buildings on the list. Resolution No. 9240 (November 19, 1981) reaffirms the Commission's concern for preservation of architecturally significant buildings and acknowledges the Director's intent to recommend denial of projects that propose to demolish significant buildings. As noted in Section III.B., no buildings on the project site are included on this list.

APPENDIX C: EMPLOYMENT AND HOUSING FACTORS

TABLE C-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1982, IN GROSS SQUARE FEET

Year	Total Gross Sq. Ft. Completed	5-Year Total (Net)/a/	5-Year Annual Average (Net)/a/	Cumulative Total of All Office Buildings	Cumulative Total of All Downtown Office Buildings
Pre-1960				28,145,000/b/	24,175,000/c/
1960	1,183,000				
1961	270,000				
1962	--				
1963	--				
1964	1,413,000				
		2,866,000	573,200		
1960-1964		(2,580,000)	(516,000)	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
		8,379,000	1,675,800		
1965-1969		(7,541,000)	(1,508,000)	38,266,000	34,295,000
1970	1,853,000				
1971	--				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
		8,615,000	1,723,000		
1970-1974		(7,753,000)	(1,550,000)	46,019,000	42,048,000
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	--				
1979	2,532,000				
		8,157,000	1,631,400		
1975-1979		(7,341,000)	(1,468,000)	53,360,000	49,389,000
1980	1,284,000				
1981	3,029,000				
1982	3,771,000	8,084,000/d/	2,694,700/d/		
1980-1982		(7,275,600)/d/	(2,425,200)/d/	60,635,600	56,559,600

(Continued)

TABLE C-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1982, IN GROSS SQUARE FEET (Continued)

/a/ Net equals 90% of gross. Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.
/b/ Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes one-third of retail-office mixed use. For post-1964, data include the entire city.
/c/ Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin St. is included.
/d/ Three-year total and average.

SOURCE: Department of City Planning, March 15, 1983.

TABLE C-2: CUMULATIVE OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF SEPTEMBER 15, 1983

Assessor's Block	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Constr.	Office (Gross Sq. Ft.) Net New Constr.	Retail (Gross Sq. Ft.) Total New Constr.	Retail (Gross Sq. Ft.) Net New Constr.
		Downtown Office Projects Under Formal Review				
110	82.129E	1000 Front	139,000	139,000	3,000	3,000
113	82.418E	1171 Sansome	30,000	30,000		
176	83.229E	801 Montgomery	31,800	31,800	6,200	6,200
227	82.463E	505 Montgomery	354,300	300,570	12,100	-4,775
258	81.131E	Pine/Kearny	315,800	315,800	6,750	6,750
271	83.13E	582 Bush	18,100	18,100	800	800
287	83.91ED	237 Kearny/Bush	125,000	87,800	6,100	2,400
287	83.148E	665 Bush (M)	15,900	6,100	0	-2,700
288	81.687ED	222 Kearny/Sutter	150,000	83,000	10,000	-8,400
331	81.448E	Mixed Use Development	218,600	210,100	44,700	19,700
641	82.200CV	1735 Franklin (C)*	8,600	8,600		
814	81.540E	101 Hayes	126,000	126,000	6,000	6,000
3702	81.549ED	1145 Market	137,500	108,500	8,000	8,000
3708	81.297ED	562 Mission	573,000	476,300	10,000	10,000
3708	83.75E	49 Stevenson	169,400	136,700	9,800	-2,900
3750	82.241E	600 Harrison at Second	228,000	228,000	10,000	10,000
3764/ 3774	82.591E	Second Street Square (C)	333,000	333,000	25,000	25,000
3769	83.213EV	59 Harrison	113,500	49,750		
3778	81.630ED	548 5th/Brannan	250,000	250,000		
3786	82.33E	655 5th/Townsend	126,250	126,250		
3786	83.272EV	525 Brannan	13,500	13,500		
3788	82.352EV	640 2nd	39,100	37,400		
3789	82.31EV	615 2nd/Brannan (C)	90,000	70,000	9,300	9,300
9900	81.63E	Ferry Building Rehab	309,500	96,000	163,500	124,000
TOTAL UNDER FORMAL REVIEW			3,915,850	3,282,270	331,250	212,375

* (C) - Conversion (generally industrial and/or warehouse to office)
(M) - Mixed Use (office/residential/commrcial)

TABLE C-2: CUMULATIVE OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF SEPTEMBER 15, 1983 (Continued)

Assessor's Block	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Constr.	Office (Gross Sq. Ft.) Net New Constr.	Retail (Gross Sq. Ft.) Total New Constr.	Retail (Gross Sq. Ft.) Net New Constr.
		Approved Downtown Office Projects				
65	82.168V	990 Columbus	12,000	12,000		
112	81.258	Ice House (C)	209,000	209,000		
136	81.245	955 Front/55 Green	50,000	50,000		
164	81.573D	50 Osgood Place	22,500	22,500	9,100	9,100
166	DR80.15	750 Battery	105,400	105,400	12,800	12,800
176	82.368E	900 Kearny	25,000	25,000	5,000	5,000
225	81.403ED	814 Stockton	3,500	3,500	3,300	3,300
265	81.195ED	388 Market at Pine (M)	234,500	85,500	10,000	-8,500
268	81.422D	250 Montgomery at Pine	105,700	65,700	8,000	8,000
270	81.175ED	466 Bush	86,700	86,700	7,800	2,200
294	82.870	44 Campton Place	7,600	7,600		
647	82.24V	1581 Bush (C)	16,000	16,000		
690	SFRA	Post/Van Ness	88,000	88,000		
716	81.581ED	Polk/O'Farrell (M)	61,600	61,600	22,400	22,400
767	STATE	State Office Building	293,300	293,300		
818	83.94EV	583-591 Hayes (C)	4,900	4,900		
3524	82.137V	44 Gough (C)	30,000	30,000		
3705	80.315	Apparel Mart III	332,400	332,400		
3707	81.492ED	90 New Montgomery	124,300	124,300	3,350	3,350
3707	81.245DA	New Montgomery Pl.	227,500	209,700	2,200	-3,900
3708	81.493ED	71 Stevenson	324,600	324,600	6,200	6,200
3709	81.113ED	Central Plaza	353,100	136,300	17,400	17,400
3717	82.82D	135 Main	260,000	260,000	4,000	4,000
3717	81.183E	123 Mission	342,800	342,800		
3724	81.102E	Holland Ct. (C)	27,850	27,850		
3729	82.860	774 Tehama	5,800	5,800		
3733	EE81.2	868 Folsom	65,000	65,000		
3733	82.29E	832 Folsom	50,000	50,000		
3735	EE80.106	95 Hawthorne (C)	61,900	61,900		
3738	DR80.5	315 Howard	294,000	294,000	3,200	3,200
3749	EE81.18	Marathon - 2nd & Folsom	686,700	686,700	35,300	35,300
3750	82.77V	642 Harrison (C)	54,400	45,900		
3775	81.147V	338-340 Brannan (C)	36,000	36,000		
3776	EE81.59	Welsh Commons (M)	55,600	55,600	12,000	12,000
37887	81.306	252 Townsend at Lusk	61,000	61,000		
3788	81.296Z	690 2nd & Townsend (C)	16,600	16,600	16,000	16,000
3789	81.552EV	625 2nd & Townsend (C)	157,000	157,000		
3794	81.569EV	123 Townsend	104,000	49,500		
3794		155 Towsend	19,000	19,000		
3803	81.244D	China Basin Expansion	196,000	196,000		
TOTAL APPROVED			5,211,250	4,724,650	178,050	147,850

(continued)

TABLE C-2: CUMULATIVE OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF SEPTEMBER 15, 1983 (Continued)

Assessor's Block	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Constr.	Office (Gross Sq. Ft.) Net New Constr.	Retail (Gross Sq. Ft.) Total New Constr.	Retail (Gross Sq. Ft.) Net New Constr.
		Downtown Office Projects Under Construction				
58	82.234E	Roundhouse (C)	45,000	45,000	3,000	3,000
143	81.353ED	1000 Montgomery (C)	39,000	39,000		
146	83.99EC	644 Broadway	42,800	42,800		
161	DR80.191	Mirawa Center	36,000	36,000	30,650	30,650
163	EE81.1	901 Montgomery	63,000	63,000	18,800	18,800
166	CU81.7	222 Pacific at Front (C)	142,000	142,000		
167	SFRA	Golden Gateway III	103,000	103,000		
176	81.673EACV	Columbus/Pacific Savoy	49,000	49,000	22,000	22,000
206	81.165D	401 Washington/Battery	13,200	13,200	1,800	1,800
208	81.104EDC	Washington/Montgomery (M)	235,000	233,300	4,000	-1,200
227	EE80.296	Bank of Canton	230,500	177,500		-800
239	DR80.1	456 Montgomery	160,550	160,550	24,250	24,250
240	81.705ED	580 California/Kearny	329,500	260,000	6,500	6,500
261	81.249ECQ	333 California (M)	640,000	466,500	15,500	15,500
262	81.206D	130 Battery	41,000	41,000		
271	81.517	453 Grant	27,500	27,500	6,200	6,200
288	DR80.24	101 Montgomery	264,000	234,000	5,900	-14,100
288	81.461EC	333 Bush (Campeau) (M)	498,400	458,100	20,900	20,900
289	81.308D	One Sansome	603,000	603,000	7,000	7,000
311	82.120D	S.F. Federal	246,800	218,850	1,600	-9,440
351	DR79.24	Mardikian/1170 Market	40,000	40,000		
672	SFRA	Wealth Investments	104,500	104,500		
743	SFRA	Van Ness/Turk (Vanguard)	85,000	85,000		
816	82.212ED	300-350 Gough (M)	16,000	16,000		
834	82.603E	25 Van Ness (C)	101,800	42,800	36,400	36,400
3512	82.14	Van Ness Plaza	170,000	170,000	6,000	6,000
3715	82.16EC	121 Steuart	33,200	33,200		
3715		141 Steuart	80,000	80,000		
3717	EE79.236	101 Mission at Spear	219,350	219,350		
3717	EE80.349	Spear/Main (160 Spear)	279,000	279,000	7,600	7,600
3722	81.417ED	144 Second at Minna	30,000	30,000		
3741	82.203C	201 Spear	229,000	229,000	5,200	5,200
3763	82.384EVD	400 2nd at Harrison	71,500	49,500		
TOTAL UNDER CONSTRUCTION			5,268,600	4,791,650	223,300	186,260

(continued)

TABLE C-2: CUMULATIVE OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF SEPTEMBER 15, 1983 (Continued)

Assessor's Block	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Constr.	Office (Gross Sq. Ft.) Net New Constr.	Retail (Gross Sq. Ft.) Total New Constr.	Retail (Gross Sq. Ft.) Net New Constr.	
		Completed But Not In Base Case Analysis					
106	81.415ED	1299 Sansome	41,000	41,000	3,500	3,500	1983
141	81.151EV	100 Broadway	13,000	13,000			1983
164	81.631D	847 Sansome	23,750	23,750			1983
164	81.251D	936 Montgomery	21,500	11,500			1983
196		736 Montgomery	40,000	40,000			1983
196	CU79.49	Pacific Lumber Co.	92,000	92,000			1983
228	81.610ED	569 Sacramento (C)	19,000	19,000			1983
237	DR80.6	353 Sacramento (Daon)	277,000	251,000	8,300	-2,000	1983
240	DR80.16	550 Kearny (Addition)	71,400	71,400			1983
263	CU79.12	101 California	1,265,000	1,257,000	24,700	-14,300	1983
287	81.550D	Sloane Building (C)	125,300	125,300	30,000	30,000	1983
292	DR79.13	Crocker National Bank	676,000	495,000	86,000	54,000	1983
312	EE79.370	50 Grant	90,000	90,000			1983
351	DR79.133	10 U.N. Plaza	92,050	92,050			1983
738	SFRA	One Flynn Center	25,000	25,000			1983
762	SFRA	Opera Plaza (M)	50,000	50,000			1983
3518	81.483V	291 10th St.	25,700	25,700		-25,700	1983
3702	EE81.25	1155 Market/8th	138,700	138,700	8,800	8,800	1983
3708	DR80.34	25 Jessie/Ecker Square	111,000	111,000			1983
3709	DR80.36	Five Fremont Center	791,200	722,200	35,000	17,300	1983
3712	DR79.11	Federal Reserve	640,000	640,000			1983
3717	EE78.413	150 Spear	330,000	330,000			1983
3718	DR79.12	Pacific Gateway	540,000	540,000	7,500	7,500	1983
3724	SFRA	Yerba Buena West	335,000	335,000			1983
3732	81.548DE	466 Clementina (C)	15,150	15,150			1983
3735	SFRA	Convention Plaza	339,000	339,000			1983
3735	SFRA	Planter's Hotel (C)	20,000	20,000			1983
3752	EE77-220	Office Bldg. (YBC SB-1)	11,000	11,000			1983
3763	81.287V	490 2nd at Bryant (C)	40,000	40,000			1983
3763	81.381	480 2nd at Stillman (C)	35,000	35,000			1983
3776	81.693EV	539 Bryant/Zoe	63,000	63,000			1983
TOTAL			6,356,750	6,062,750	203,800	79,100	
GRAND TOTAL (ALL PROJECTS)			20,752,450	18,861,320	936,400	625,585	

* (C) - Conversion (generally industrial and/or warehouse to office)
(M) - Mixed Use (office/residential/commrcial)

SOURCE: Department of City Planning.

TABLE C-3: PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS, 1982-90

	Project Demand in 1985	Cumulative Demand 1982 to 1990/c/		Net Housing Stock Growth 1983-1990/d/	Demand as a Percent of Growth 1982 to 1990	
	Number of Households*	Number of Employees**	Number of Households**	No. Units	Project	Cumulative
San Francisco /a/	130 to 270	11,300 to 30,200	8,100 to 16,800	8,400	1.5 to 2.3	96.4 to 200.0
Peninsula /b/ (San Mateo and Santa Clara Cos.)	170	13,600	10,500	61,600	0.3	17.0
East Bay /b/ (Alameda and Contra Costa Cos.)	280	22,700	17,400	73,400	0.4	23.7
North Bay /b/ (Marin and Sonoma Cos.)	110	9,100	7,000	28,500	0.4	24.5
TOTAL	690 to 830	56,700 to 75,600	43,000 to 51,700	171,900	0.4 to 0.5	25.0 to 30.1

/a/ Range of San Francisco employees and households based on 101 Montgomery Street Final EIR, EE80.26, certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and "Office Housing Production Program (OHPP) Interim Guidelines," Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).
/b/ Distribution of employees based on weighted average of expected employees in Federal Reserve Bank (EE78.207), 101 California Street (EE78.27), Pacific Gateway, (EE78.61), and Crocker National Bank (EE78.298), from 456 Montgomery Street Final EIR (EE78.178), p. 167. Workers per household in non-San Francisco Counties is assumed to be 1.3 based on 1980 Census data; distributions are: Peninsula, 18%, East Bay, 30%, and North Bay 12%.
/c/ Total office space considered in this analysis is about 18.9 million sq. ft. of net new office space (see Tables C-2, Appendix C). The proposed Housing Element (May 1982) estimates San Francisco housing needs from 1980-85 in Table 21A. This estimate, based on the Citizen's Housing Task Force Report, July 21, 1982, shows a need for about 16,000 to 19,000 units. The "needs" estimate uses a similar office development basis, but also includes housing demand generated by other sources in addition to office development and covers the years 1980-85.
/d/ Net housing stock growth is based on "Projections 83," Association of Bay Area Governments, January 1980. Projections contained in this document for 1980-1990 were prorated to reflect 1982-1990 net housing stock growth.
* Rounded to the nearest ten.
** Rounded to the nearest 100.

SOURCE: Environmental Science Associates, Inc.

TABLE C-4: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

Gross Annual Income Per Household or Per Individual	Maximum Affordable Monthly Housing Expenditure*	Housing Cost and Type of Unit		
		Monthly Cost**	Type of Unit (Price)	Source
$5,000	$125			
8,300 /a/	208			
10,000	250			
10,680	267	$267 -	Census Median Rent	/e1/
11,560	289	289 -	Median Rent, Studio Apartments	/f1/
15,000	375			
18,200	455	455 -	Median Rent, All Units	/f2/
20,000	500			
23,520	588	588 -	Median Rent, 3+ Bedroom Units	/f3/
25,000 /b/	625			
27,300 /c/	683			
30,000 /b/	750			
35,000	875			
40,000	1,000			
40,880	1,022	1,022 -	Lowest House Price ($95,000)	/g1/
45,000	1,125	1,125 -	Census Median Value (104,600)	/e2/
50,000	1,250			
52,560	1,314			
55,000	1,375			
65,080	1,627	1,627 -	Median House Price (151,203)	/g2/
101,880	2,547	2,547 -	Highest House Price (236,750)	/g3/
300,000 /d/	7,500			

(Continued)

TABLE C-4: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME (Continued)

* The Office Housing Production Program (OHPP) Interim Guidelines, January, 1982, define affordable housing as follows:
Rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues.
For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that 8% of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.
** Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assuming 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.

/a/ U.S. Bureau of Labor Statistics, March, 1982, "Area wage survey for the San Francisco-Oakland, California Metropolitan Area." $9,600 was the mean 1980 income of inexperienced file clerks, one of the lowest-paid office occupations listed.

/b/ The range of $25,000 to $30,000 is assumed to approximate the median annual income of project employees (see Bank of Canton Final EIR, EE80.296, certified July 15, 1982, for discussion of incomes).

/c/ The $27,300 income figure was derived by inflating the $16,300 median income of downtown office workers from the 1974 SPUR survey through December, 1981 by 67% using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, and real estate sector employees since 1974.

/d/ Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery St. was estimated to be $52,560 and the highest salary for corporate officers $300,000, according to a 1981 survey.

/e/ City Planning and Information Services, "1980 Census Information," March 1982: 1. median rent 2. median noncondominium housing value. Rental data include residential hotels whose rent levels may be substantially lower than those of other types of rental dwellings and may therefore have an effect on the median rent.

(Continued)

TABLE C-4: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME (Continued)

/f/ Department of City Planning, "Rent Survey," 1980. Median rents are for:
1. studio apartments 2. all units 3. 3+ bedrooms.
These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.

/g/ San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. (Annual data on housing sales prices include all homes listed by the Board of Realtors that were sold from February 11, 1981 to October 1, 1981 in San Francisco):
1. lowest price 2. median price 3. highest price

SOURCE: Environmental Science Associates, Inc.

TABLE C-5: SUMMARY OF RECENT STUDIES ON FISCAL IMPACTS OF DOWNTOWN DEVELOPMENT

STUDY, AUTHOR, DATE	PURPOSE OF STUDY	DATA SOURCES	STUDY METHODOLOGY	CONCLUSIONS
"Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, Sedway/Cooke, et al., October 1979, pp. 56-59	To qualitatively assess the likely fiscal impact of new development in the C-3 area under Proposition O.	SPUR STUDY (1975)	SPUR cost/revenue estimates for downtown in 1973 and for projected growth 1974-1990 were assumed. Proposition 13's effect on revenues and the possible need for increased transportation infrastructure were considered. Generalized conclusions about fiscal impact of new development were drawn.	1) After Proposition 13, "costs may exceed revenues in the downtown by as much as 25%." 2) "[N]ew downtown development will not solve the city's growing fiscal problem; without new revenue sources, development will make it worse in the long run."
Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980	To quantify for 1976-77 (pre-Prop.13) and 1978-79 (post-Prop. 13) how much revenue the C-3-O area generated and how much it costs to provide city services to the area.	Data compiled from city records and through conversations with city officials.	Only revenues generated within the C-3-O and costs of providing services to the C-3-O counted. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city."	The C-3-O generated $56.79 million in 1976-77, or 61% more than the cost of city services to the area. In 1978-79, revenues were $53.29 million, or 48% greater than costs.
"Fiscal Considerations" Appendix C, 101 Montgomery Street FEIR, Recht Hausrath & Associates, January 1981.	Generalize conclusions about how post-Proposition 13 development downtown is likely to change the City's fiscal health from what it would be without new development.	SPUR Study, city records and conversations with city officials.	Under alternative assumptions about the cost/revenue balance in existing buildings and in new buildings, the fiscal impact over time of new development was compared to that of no new development.	"[A]n on-going process of new development would improve the City's fiscal situation. This beneficial impact would cease if new development were halted. This conclusion is tentative due to uncertainties about increased Muni costs."
Downtown Highrise District Cost/Revenue Study, David Jones, February 1981.	To quantify for 1978-79 the revenues generated by businesses in the C-3-O and the service costs imposed on the city and BART by the C-3-O.	Arthur Andersen study.	The Jones study differs from the Andersen study primarily as follows: 1) Costs of BART (but not revenues to BART) are included; 2) Only revenues paid by businesses and building owners are considered; 3) Muni deficit is computed differently; 4) Most costs estimated as percentage of revenues rather than actual service demand in the C-3-O.	The C-3-O imposed costs of $94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco.
Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, Gruen Gruen + Associates, March 1981	To quantitatively estimate City revenues from the C-3-O and costs of serving the C-3-O in 1998, assuming the addition of 30 million square feet of building space in the C-3-O between 1981 and 1998.	Arthur Andersen study; data compiled from city records and through conversations with City officials.	"Only direct effects are considered." Costs are only measured for services "provided within the physical limits of the C-3-O district" and revenues are limited to "taxes on buildings within the district and the activities that take place within those buildings." Assumes the Arthur Andersen study is accurate and builds upon it.	In 1980, revenues from the 39 million square feet of building space in C-3-O were 1.66 times as large as costs. In 1998, after completion of the 30 million square feet of new space, revenues from the entire 69 million sq. ft. of C-3-O building space would increase to 1.92 times as large as costs.

SOURCE: Recht, Hausrath and Associates

APPENDIX D: TRANSPORTATION, CIRCULATION AND PARKING

CUMULATIVE DEVELOPMENT TRAVEL DEMAND/1/

Travel demand from the 18.4 million gross sq. ft. of net new cumulative office development and 0.6 million gross sq. ft. of net new cumulative retail development in downtown San Francisco has been estimated using a land-use approach for trip generation. Future travel into the downtown is assumed to be a result of construction and occupancy of downtown office and retail space. The Office of Environmental Review of the Department of City Planning has identified office projects in the greater downtown area as being under formal review, approved, or under construction. Table C-2 shows the list of projects, distributed by review status, and including Assessor's Block number, City case number, and size of development for each project. The information in this table was the most current data available from the Department of City Planning at the time of preparation of this document.

Two redevelopment areas (Yerba Buena Center and Rincon Point - South Beach) and one private development (Mission Bay) are in or near the Downtown. In the redevelopment areas, most building sites do not yet have approved Land Disposition Agreements (LDAs). Until specific LDAs are approved, no estimate of travel demand can be made (thus, parcels for which no LDA exists have not been included in the cumulative analyses). Development in the Yerba Buena Center (YBC) Redevelopment Area will be in accordance with the YBC Redevelopment Plan, as amended. Possible land uses that would be in accordance with the Yerba Buena Center Redevelopment Area Plan include commercial entertainment, convention facility (in place), cultural, downtown support service, exhibit/ballroom space, hotel rooms, institutional, light industry, market-rate dwelling units, subsidized dwelling units, office, park or plaza, pedestrian concourse, parking, and retail./2/ Possible land uses in the Rincon Point - South Beach Redevelopment Area include hotel, housing, office, open space, public parking, retail, and warehouse uses./3/ Mission Bay has not been included in the cumulative analyses because no PDEIR has been submitted to the City and it is uncertain what formal proposal may be made. There are currently 11 alternative development scenarios under consideration for Mission Bay.

Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table C-2, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. ("Net new" space refers to the amount of new construction in excess of existing space on each site, in gross sq. ft. of floor space. It does not refer to net leasable nor net rentable floor space).

Estimates of future travel from cumulative development have been made using the methodology and data specified in the Guidelines./1/ Briefly, the process determined gross travel demand by applying trip generation rates to proposed square footage of land use; the gross travel is assigned to specific travel modes (auto, transit, walk, etc.) on the basis of regional residence distribution and existing modal split percentages. The end result of the

process is travel increases on specific transportation modes which can be compared to measured existing travel.

A basic assumption in all of the transportation analyses is that existing regional travel distributions and modal splits would continue into the future unchanged. The implicit assumption has been made that about 50% of the future employees would live in San Francisco. If housing is not available in the City, then a greater impact than noted would result on the commute corridors into the City from the North Bay, East Bay, and Southern Peninsula; however, the impact on Muni would be less than noted because City residents are the majority of Muni users.

TRANSIT ANALYSIS

Table D-1 shows the existing transit conditions. Photographs of existing loading conditions in Muni are shown in Figure D-1, p. A-48. Transit demand has been projected based upon existing travel patterns and is assumed not to depend upon the availability of transit capacity. Calculations have been made for two levels of operations (load factors). One load factor has been based upon existing capacity and represents conditions that would result if no improvements are made to the transit system. The second load factor is based upon forecast capacity (as defined in each agency's five-year plan) and portrays conditions that would result if planned, scheduled improvements are made./4/

Muni is proposing to increase systemwide capacity by 13% (see Table D-1, p. A-40). BART is projecting a peak-period capacity of 16,500 seats per hour transbay (eastbound) and 11,000 seats westbay (westbound). Recommended maximum capacity, as described by BART, would be 24,750 and 16,500 persons per hour, respectively. AC Transit does not propose any increases for its transbay service. AC Transit is restrained from implementing capacity increases on its transbay routes by the Metropolitan Transportation Commission (MTC) because those routes are in direct competition with BART.

SamTrans is proposing a capacity of between 4,800 and 5,000 seats per hour on its San Francisco routes. Recommended maximum capacity, as described by SamTrans, would be 6,250 riders. CalTrain (Southern Pacific) is proposing to increase seated capacity by 22%. Station improvements, including additional parking, are also proposed. Ridership on CalTrain has been steadily declining over the past several years. Demand projections in this EIR are based upon an existing modal split rather than a trend and consequently show an increase in ridership on CalTrain. Operating costs for CalTrain commute service have been assumed by a joint-powers committee comprised of CalTrans, Muni, SamTrans, and Santa Clara County Transit. The committee is evaluating the need for additional service improvements. Golden Gate Transit is proposing to increase peak period (6-10 a.m.) motor coach capacity by 25%. Golden Gate Transit is currently operating only two of the three Larkspur ferries. The proposal for future ferry service improvements involves converting all three Larkspur ferry boats from gas turbine to diesel engines and using all three ferries on the Larkspur/San Francisco route. The district proposes to increase peak-period ferry service by 70% by using all three ferries and operating additional runs during the peak-hour.

TABLE D-1: PEAK-PERIOD TRANSIT RIDERSHIPS AND CAPACITIES/a/ (Selected Routes;/b/ Peak Direction Only)

	P.M. Peak Hour			P.M. Peak Period (Two Hours)		
	1983 Riders	1983 Total Capacity	1990 Total Capacity	1983 Riders	1983 Total Capacity	1990 Total Capacity
Muni:						
Northeast	4,150	5,260	6,510	7,950	10,870	13,450
Northwest	6,690	7,610	8,640	11,300	14,090	16,050
Southwest	11,460	14,240	16,126	19,940	27,380	30,990
Southeast	2,190	2,730	3,370	3,880	5,540	6,670
BART:						
TransBay	14,250	15,160	27,750	21,800	24,760	40420
Westbay	9,360	10,480	16,500	14,000	21,050	33,150
A-C Transit	8,540	12,090	12,090	12,780	18,340	18,340
SamTrans	1,700	2,180	6,250	2,590	3,300	9,460
CalTrain	3,120	5,090	6,210	3,285	5,570	6,800
Golden Gate Transit:						
Motor Coach	4,510	6,440	8,040	7,350	10,730	13,400
Ferry	800	2,080	2,830	880	2,650	3,400

/a/ Capacity is as stated in each agency's five-year plan.

/b/ Muni Northeast: Lines 3, 15, 19, 25, 30, 30X, 41(tc), 42, 45
Northwest: Lines 1, 1AX, 1BX, 2, 4, 5, 21, 31, 31AX, 31BX, 38, 38L, 38AX, 38BX
Southeast: Lines 15, 19, 25, 30X, 30AX, 30BX, 47
Southwest: Lines 6, 7, 8, 9, 11, 12, 14, 14X, 16X, 17X, 26, 27, 66L, 71, 72X, J, K, L, M, N
SamTrans: Lines 7F, 7B, 5M, 7R, 1C, 25, 10T, 10L, 7A, 7Z, 22D.
A-C Transit: Lines A, B, BX, C, CH/CB, E, EX, F, FSG/FX, G, H, K, KH, L, LX, N, NX, O, OX, R/RH, RD/RF/RCV, S, SW, V, W, Y.

SOURCE: Publicly available data was supplied by the following agencies and personnel: BART, J. Stamus, August 19, 1983; A-C Transit, Kay More, June 15, 1982; SamTrans, G. Kipp; CalTrans, Elmer Hall, June 14, 1982; Golden Gate Transit, A. Zahradnik, July 1, 1982; Muni data is from the Guidelines, p. 25 and 26.

PEDESTRIAN ANALYSIS

The pedestrian analysis has been conducted following methods developed by Pushkarev and Zupan in Urban Space for Pedestrians (MIT Press, 1975). Table D-2 shows the relationship between pedestrian flow rates and the flow regimes (categories) used to describe levels of operation. Figure D-2, p. A-51 shows photographs of pedestrian conditions that correspond to the flow regimes.

TABLE D-2: PEDESTRIAN FLOW REGIMEN

FLOW REGIME/a/	CHOICE	CONFLICTS	FLOW RATE (p/f/m)/b/
Open	Free Selection	None	less than 0.5
Unimpeded	Some Selection	Minor	0.5 to 2.0
Impeded	Some Selection	High Indirect Interaction	2.1 to 6.0
Constrained	Some Restriction	Multiple	6.1 to 10.0
Crowded	Restricted	High Probability	10.1 to 14.0
	Design Limit - Upper Limit of Desirable Flow		
Congested	All Reduced	Frequent	14.1 to 18.0
Jammed	Shuffle Only	Unavoidable	Not applicable/c/

/a/ Photographs of these conditions are shown in Figure D-2, p. A-51.
/b/ P/F/M = Pedestrians per foot of effective sidewalk width per minute.
/c/ For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.
SOURCE: Urban Space for Pedestrians, MIT Press, 1975, Cambridge, MA.

TRAFFIC AND PARKING ANALYSIS

Estimates of vehicle travel have been calculated from the modal split data presented in the Guidelines. Vehicle trip-ends were estimated by dividing person trip-ends in automobiles (drive alone, carpool and vanpool) by numbers of persons per vehicle (three persons per carpool and five persons per vanpool).

Vehicle travel and parking demand have been based upon demand projections and are unconstrained by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into the Downtown is essentially fixed at existing levels because major construction would be required to add new capacity. Current levels of vehicle traffic on the

freeway and bridge system are at or near capacity. If the projection of person trip-ends in autos is correct, the levels of vehicle occupancy would have to increase in the future as the freeway and bridge system could not handle an appreciable increase in autos during the peak hour. If vehicle occupancy were to increase, vehicle trip-ends and parking demand would be less than projected. Alternately, the peak-hour level of demand could spread into hours adjacent to the peak hour (as is happening). However, there is a limit as to how far the peak can spread over time and still allow business to function effectively.

Prediction of a parking deficit is hindered by the inability to accurately predict modal shifts (i.e., shifts from single occupant autos to ridesharing or transit) and by the uncertainties of the City parking policy and implementation (i.e., how many spaces the City will approve in the future, where they will be located and how many existing spaces the City will allow or require to be removed or converted from long-term to short-term). Consequently, parking predictions show a deficit based upon existing modal splits. As the factors influencing modal choice -- such as availability of transit and carpools, desirable transit and carpool schedules, walking distance, parking location and availability, parking cost, employee subsidies of parking cost, etc. -- differ between individuals, it is not possible to predict how future travel patterns may differ.

The daily parking demand was based on the projected number of auto driver work and non-work trips. The average length of stay for non-work trips is estimated to be two hours./5/ To estimate the work or long-term parking demand, all of the auto driver work trips were assumed to generate demand for one parking space per trip per day. The non-work or short-term parking demand was calculated by dividing the non-work auto driver trips by a turnover factor based upon average length of stay. (Turnover was calculated by dividing a 9-hour working day, 8:00 a.m. - 5:00 p.m., by the average length of stay of two hours to give a turnover factor of 4.5.) Thus the average short-term (non-work) parking demand was calculated as spaces per hour.

The availability of short-term parking was estimated in an area within one-quarter mile (1,320 ft.) of the project. Buildings proposed and under construction that would generate short-term parking demand within the 1,320 ft. radius area were identified and the short-term parking demand was summed to give a projection of short-term demand. Long-term parking demand was based upon the number of expected work-related auto trips into the downtown. Parking supply was estimated over the greater downtown and South of Market area as travel time from parking space to final destination was no longer assumed to be the primary determinant for parking selection.

INTERSECTION ANALYSIS

The capacity analysis of each intersection at which a turning movement count was made utilized the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, Traffic Engineering. This

method is also explained in "Interim Materials on Highway Capacity", Transportation Research Circular No. 212, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service (see Table D-3). For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio was calculated by dividing the existing volume by the capacity at Level of Service E.

EMPLOYMENT TREND APPROACH TO CUMULATIVE ANALYSIS

In this and other San Francisco EIRs, a land use approach has been used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate approach is to forecast travel demand based upon regional projections of employment share (employment trend approach)./6/ Briefly, the fundamental differences between (and limitations of) the two approaches are:/7/

The land use approach (as it has been applied in this EIR) has used net new office space actually proposed or under construction (less space in buildings demolished to make way for new buildings) as the basis for travel generation. The land use approach assumes that literally all of the currently proposed development in the downtown area will be constructed and fully occupied within the time frame of the 505 Montgomery St. project development and occupancy. No allowance has been made for less than 100% occupancy, for proposed developments that are never constructed, or for those that would not be occupied within the time frame of the 505 Montgomery Street project.

The employment trend approach generates a total increase in employment in downtown that has taken account of loss of employment as industries and offices move out of the City, replacement of one industry with another (industry shifts), as well as replacement of existing office space with new office space. The employment trend approach makes no implicit assumptions concerning occupancy rates or actual square footage of development constructed; rather, it generates total employment increases by assigning jobs by metropolitan sector (area), based upon extrapolation of past trends, and considering long-term industry shifts to, within, and away from each area.

Note that neither of the two approaches has attempted to project future changes in modal split.

To illustrate the differences in projections resulting from the two approaches, Table D-4, following, shows the total employment projections by the two methods (and the project's share thereof), the regional distribution of trips, and Muni's share of the new transit travel (and the project's share thereof).

As shown in the table, the employment trend approach predicts about 16% fewer employees in the downtown and about four percent more riders on the Muni than does the land use approach. The employment trend approach would thus

TABLE D-3: VEHICULAR LEVELS OF SERVICE AT SIGNALIZED INTERSECTIONS

Level of Service	Description	Volume/Capacity (v/c) Ratio/a/
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.	less than 0.60
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.	0.61-0.70
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.	0.71-0.80
D	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	0.81-0.90
E	Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting up-stream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	0.91-1.00
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	1.01+

/a/ Capacity is defined as Level of Service E.

SOURCE: San Francisco Department of Public Works, Traffic Division, Bureau of Engineering from Highway Capacity Manual, Highway Research Board, 1965

TABLE D-4: COMPARISONS OF LAND-USE AND EMPLOYMENT-TREND APPROACHES

Approach	Downtown Employment Increase	Project Share/a/	Regional Trip Share S.F.	Pen.	E.B.	N.B.	Muni Peak-hour Increase/b/	Project Share/c/
Land Use	73,800	1.7%	49%	11%	32%	8%	11,100	1.5%
Empl.Trend/d/ (maximum)	56,100	2.2%	50-54%	19%	17-21%	10%	12,900/e/	1.3%

NOTE: Comparisons between the entries for the two approaches must be made with the understanding that the land-use approach reflects increases in employment and transit demand based solely upon increases in downtown office space, while the employment trend approach reflects total increases therein based upon historical trends. The differences among the regional trip share figures reflect these and the other differences between the two approaches.

/a/ Employment generated by the proposed 505 Montgomery St. project, as a percent of the cumulative downtown employment increase.
/b/ The Muni peak-hour increase is a demand projection (based upon existing and long-term employment trends) that is not dependent upon available or expected transit capacity.
/c/ Muni peak-hour trips generated by the proposed 505 Montgomery St. project, as a percent of the cumulative downtown Muni peak-hour increase.
/d/ These figures represent the worst-case analysis under the employment trend approach reviewed and accepted by MTC, ABAG and Muni. Note that the land-use approach entries assume that an additional net new 18.4 million gross square feet of office space will come on line by late 1990.
/e/ Based on 54% regional trip split to San Francisco (worst-case).

approximate the transit demand impacts discussed on pp. 94-97 of the EIR. Similar conclusions can be drawn for the other transit agencies.

The two methods differ in several ways. The land-use approach, as it has been applied in San Francisco EIR's, analyzes impacts for the p.m. peak hour, whereas the employment trend approach analyzes the a.m. peak. Several reasons exist as to why one peak (or the other) may be the better one to analyze.

First, the p.m. peak may be more useful to analyze; actual observation shows that the p.m. peak has a greater overall effect on the local street network and transit system in the Downtown than does the a.m. peak, because more travel takes place during the p.m. peak. Also, transit service is more inclined to differ from scheduled times during the p.m. peak than during the a.m. peak, as operational delays have had an 8- to 10-hour period over which to accumulate. Finally, the on-ramps to the freeway/bridge system are greater bottlenecks (in the p.m. peak) than are the off-ramps (in the a.m. peak).

Conversely, the characteristics of the a.m. peak may be more useful in that they are much sharper than those of the p.m. peak (i.e., a greater percentage of the peak-period travel occurs during a single hour). Also, as a result of the bridge system into San Francisco, travel inbound into the City is much easier to document, as tolls are collected on the inbound direction on the Golden Gate and Bay Bridges. Finally, a greater proportion of the travel occurring during the a.m. peak is employment-related; the p.m. peak also includes shopping and pleasure trips that are not directly affected by increased office space.

The land-use approach, as it has been used in this EIR, examines the p.m. peak because it has been observed to be the worst case for congestion on the City transportation system. This analysis does not reflect the spreading of the p.m. peak that is currently occurring, as all of the new trips have been assumed to take place in a single hour.

The land use approach calculations have assumed transit capacity to be fixed at existing levels. The OER memorandum/7/ points out, "It should be recognized that transportation is a more 'elastic' resource with many options for expansion including increasing existing capacity by using articulated vehicles, expanded car pool and van pool programs and increasing the peak commuter period through flex-time programs, among others."

If future office development does not occur along the lines of the past long-term trends, as assumed in the employment trend approach, then the projections made in Working Paper I would be revised. The average annual growth during the period 1965-1980 was less than the growth per year proposed, approved, or under construction for the period 1980-1984. The employment trend approach assumes average growth through 1990 would be at the lower historic rate, reflecting activity fluctuations from the current rate including slowdowns due to changing business conditions.

Until a forecast exists to determine how the current decade's cycle of development may differ from the past, a judgment of the applicability of results from Working Paper I may not be made. Consequently, this EIR has retained the land-use approach and presented this comparison of the employment trend approach. Both methods should be looked upon as describing potential scenarios of future conditions.

NOTES

/1/ The methodology and the data necessary to calculate cumulative travel are as specified in the Guidelines for Environmental Review: Transportation Impacts, Department of City Planning, September 1983. The regional travel distribution and modal split, office and retail trip generation rates and trip purpose and peak-hour and peak-period percentages are contained in that document, which is incorporated by reference in this EIR.

/2/ Land uses from Second Supplement Yerba Buena Center Final Environmental Impact Report, San Francisco Department of City Planning, May 28, 1982

/3/ Land uses from Rincon Point - South Beach Redevelopment Area, San Francisco, California, Final Environmental Impact Report/Environmental Impact Statement, San Francisco Department of City Planning certified November 5, 1980.

/4/ Muni projections from Municipal Railway Short-Range Transit Improvement Plan, San Francisco Public Utilities Commission, July 1983; BART projections from Marty Birkenthal of BART on August 18, 1982; SamTrans projections from Gregory Kipp of SamTrans on August 18, 1982; A-C Transit proposals from Ted Reynolds of AC Transit on August 18, 1982; Golden Gate Transit proposals from Alan Zahradnik of Golden Gate Transit on August 19, 1982, Southern Pacific proposal from Darnall W. Reynolds, CalTrans District 04, November 2, 1982.

/5/ The parking characteristics data are from a federally-sponsored research document: Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Rept. No. 62, 1969, National Cooperative Highway Research Program (NCHRP)

/6/ Department of City Planning, Working Paper I, Projection of Long-range Transportation Demand, May, 1982, prepared in cooperation with the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Municipal Railway (Muni). Employment trend data was compiled by ABAG from trends in County Business Pattern (U.S. Department of Commerce, Bureau of the Census, March 12, 1979), with 1979 as the base year for future projections and regional distributions. Modal split data are from the 1975 Travel Survey prepared by MTC.

/7/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

30X MARINA EXPRESS - BAYSHORE AVE. AND ARIETA AVE.
Wednesday, October 7, 1981 - 8:00 A.M. - Inbound

J CHURCH - CHURCH ST. AND DUBOCE AVE.
Tuesday, September 29, 1981 - 9:00 A.M. - Outbound

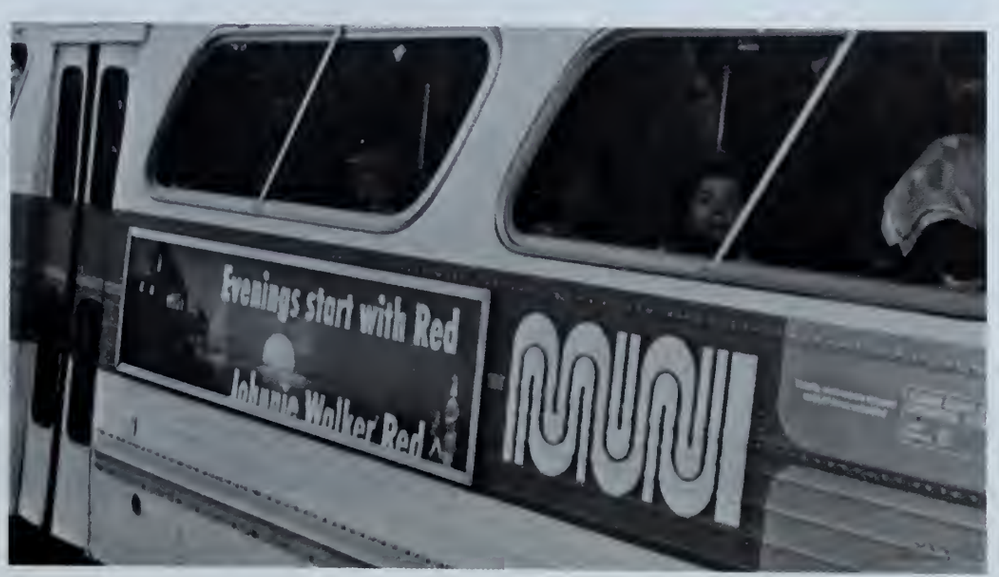
FIGURE D - 1

Photographs of Peak Muni Loading Conditions

SOURCE:
Environmental Science Associates, Inc.

K INGLESIDE - VAN NESS STATION
Wednesday, September 9, 1981 - 8:00 A.M. - Inbound

N JUDAH - VAN NESS STATION
Wednesday, September 16, 1981 - 5:00 P.M. Outbound



38 GEARY - VAN NESS AVE. AND O'FARRELL ST.
Wednesday, October 21, 1981 - 9:00 A.M. - Inbound

38 GEARY - VAN NESS AVE. AND GEARY BLVD.
Wednesday, October 21, 1981 - 4:20 P.M. - Outbound

FIGURE D-1

Photographs of Peak Muni Loading Conditions

SOURCE:

M OCEAN VIEW - CIVIC CENTER STATION
Wednesday, September 9, 1981 - 8:20 A.M. - Inbound

L TARAVAL - VAN NESS STATION
Wednesday, September 16, 1981 - 4:50 P.M. - Outbound

14 MISSION - MISSION STREET AND SOUTH VAN NESS AVE.
Tuesday, September 29, 1981 - 5:45 P.M. - Outbound

N JUDAH - DUBOCE AND CHURCH
Wednesday, June 8, 1983 - 8:00 A.M. Inbound

FIGURE D - 1

Photographs of Peak Muni Loading Conditions

SOURCE:
Environmental Science Associates, Inc.

JAMMED FLOW. Space per pedestrian in this view is about 3.8 sq ft (0.35 m^2). This is representative of the lower half of the speed-flow curve, where only shuffling movement is possible and even the extremely uncomfortable maximum flow rate of 25 people per min per ft (82 per m) of walkway width cannot be attained due to lack of space. Photograph by Louis B. Schlivek.

The threshold of CONGESTED FLOW. The first eleven people in the view have about 16 sq ft (1.5 m^2) per person, corresponding to a flow rate of about 15 people per min per ft (49 per m) of walkway width. The beginnings of congestion are evident in bodily conflicts affecting at least three of the walkers, and in blocked opportunities for walking at a normal pace.

The onset of CROWDED FLOW, with an average of about 24 sq ft (2.2 m^2) per person, or a flow rate of about 10 people per min per ft (33 per m) of walkway width. Choice of speed is partially restricted, the probability of conflicts is fairly high, passing is difficult. Voluntary groups of two, of which two can be seen in the picture, are maintained, but cause interference. Note also some overflow into the vehicular roadway in the background.

The midpoint of the CONSTRAINED FLOW range, with about 30 sq ft (2.8 m^2) per person, or a flow rate of about 8 people per min per ft (26 per m) of walkway width. The choice of speed is occasionally restricted, crossing and passing movements are possible, but with interference and with the likelihood of conflicts. The man in the dark suit seems to be able to cross in front of the two women in the foreground quite freely, but in the background near the curb people are having difficulty with passing maneuvers.

FIGURE D-2

Photos of Pedestrian Flow Levels

SOURCE:
Pushkarev and Zupan

The borderline between IMPEDED and UNIMPEDED FLOW, with about 130 sq ft (12 m^2) per person, or a flow rate of about 2 people per min per ft (6.5 per m) of walkway width. Individuals as well as couples visible in this view have a choice of speed and direction of movement. This rate of flow is recommended for design of outdoor walkways in office districts and other less dense parts of downtown areas.

The uneven nature of UNIMPEDED FLOW. While the people walking in the plaza—which is 17 ft (5.2 m) wide, compared to 23 ft (7 m) in the preceding picture—have almost 130 sq ft (12 m^2) per person on the average, the space allocation for the eight individuals in the foreground is closer to 70 sq ft (6.4 m^2). Thus, indirect interaction with others is still quite frequent in the upper range of UNIMPEDED FLOW.

The midpoint of the IMPEDED FLOW range, with about 75 sq ft (6.9 m^2) per person, or a flow rate of about 4 people per min per ft (13 per m) of walkway width. Physical conflicts are absent, but pedestrian navigation does require constant indirect interaction with others. This rate of flow is recommended as an upper limit for the design of outdoor walkways in shopping districts and other dense parts of downtown areas.

Lower range of UNIMPEDED movement, approaching OPEN FLOW. About 350 sq ft (32.2 m^2) per person, or a flow rate of less than 1 person per min per ft (3.3 per m) of walkway width. Complete freedom to select the speed and direction of movement; individuals behave quite independently of each other. For a design standard based solely on pedestrian density, this amount of space can be considered excessive.

FIGURE D-2

Photos of Pedestrian Flow Levels

SOURCE:
Pushkarev and Zupan

APPENDIX E: WIND STUDY METHODOLOGY

This summary of wind study methodology is based on the report prepared by Bruce R. White, Ph.D., Associate Professor of Mechanical Engineering at the University of California, Davis. The study is independent of the University. This report is available for review at the Office of Environmental Review, 450 McAllister St., San Francisco.

A 1 inch = 50 ft. scale model of the downtown San Francisco area surrounding the proposed building for several blocks in all directions was provided by Environmental Science Associates. The model included three configurations (existing, project, and alternative project conditions). Proposed, approved and under construction buildings in the project area were included in the model: 655 Montgomery St., Bank of Canton headquarters, 456 Montgomery St., 580 California St., and 550 Kearny St. addition.

The model was tested in a wind tunnel that allows testing of natural atmospheric boundary layer flows past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 ft.), a test section of 1.22 m (4 ft.) wide by 1.83 m (6 ft.) high, and an adjustable false ceiling. The adjustable ceiling and turbulence generators allow speeds within the tunnel to vary from 1 to 4 meters per second (m/s) or 4.8 to 19.3 miles per hour (mph).

The wind study was divided into two parts: flow visualization and wind-speed measurements. The flow visualization observations were performed by injecting a continuous stream of smoke at various near-surface locations. The subsequent motion of the smoke was recorded, and prevailing wind directions were determined. Wind-speed measurements were made at 22 surface locations with a hot-wire anemometer, an instrument that directly relates rates of heat transfer by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. Both the mean wind speeds and corresponding turbulence intensities were measured. Thus, high wind speeds and gustiness (large variable changes in wind speeds over short changes in time) could be detected. Hot-wire measurements made close to the surface have an inherent uncertainty of $\pm$ 5% of the true values. The ratio of near-surface speed to freestream wind speed was calculated from the hot-wire measurements. These speeds are discussed in the text.

Experiments were performed for three prevailing wind directions (westerly, northwesterly, and southwesterly) for the existing, project, and alternative conditions. These wind conditions are the most common in San Francisco, and are therefore the most representative for evaluation purposes. All hot-wire measurements were taken at the same series of surface points around the building site for the three wind directions and the site conditions.

TABLE E-1: WIND SPEED EFFECTS

Wind Measurement Location	Wind Direction and Development Case *					
	West		Southwest		Northwest	
	1	2	1	2	1	2
3	3.7	4.1	4.2	4.8	12.2	11.7
4	3.9	6.2	6.1	6.2	6.6	6.3
5	7.1	8.1	7.3	7.1	8.8	9.4
6	3.0	3.2	3.9	6.2	4.1	10.2
7	3.9	5.1	3.7	4.1	3.7	4.6
8	3.2	5.9	3.7	3.6	6.9	4.1
12	3.2	5.9	3.9	4.8	6.1	6.6
15	4.3	7.7	4.7	4.8	6.9	10.6
18	2.1	7.8	3.5	2.1	2.6	3.4
19	7.1	7.1	8.8	10.2	4.4	4.4
20	7.7	7.4	7.0	8.2	6.3	6.3
21	5.1	9.2	5.2	6.5	5.3	6.1

* Case 1: Setting
  Case 2: Proposed Project

SOURCE: Bruce White, Ph.D.

APPENDIX F: SAN FRANCISCO AIR CONTAMINANT SUMMARY 1980-1982

STATION: 900 23rd Street, San Francisco

POLLUTANT:	STANDARD	1980	1981	1982
OZONE (O_3) (Oxidant)				
1-hour concentration (ppm /a/)				
Highest hourly average	0.10/b/ 0.12 /c/	0.09	0.07	0.08
Number of excesses of State standard		0	0	0
Expected Annual Excess (National)/d/		0.0	0.0	0
CARBON MONOXIDE (CO)				
1-hour concentration (ppm)				
Highest hourly average	20 /b,e/	10	8	12
Number of excesses of standard		0	0	0
8-hour concentration (ppm)				
Highest 8-hour average	9 /b,c/	7.5	5.3	9.1
Number of excesses of standard		0	0	0
NITROGEN DIOXIDE (NO_2)				
1-hour concentration (ppm)				
Highest hourly average	0.25 /b/	0.17	0.11	0.13
Number of excesses of standard		0	0	0
SULFUR DIOXIDE (SO_2)				
24-hour concentration (ppm)				
Highest 24-hour average	0.05 /b/	0.018	0.016	0.012
Number of excesses of standard/f,g/		0	0	0
TOTAL SUSPENDED PARTICULATE (TSP)				
24-hour concentration (ug/m^3)/h/				
Highest 24-hour average	100 /b/	173	103	126
Number of excesses of standard/g/		6	1	3
Annual concentration (ug/m^3)				
Annual Geometric Mean	60 /b/	52.1	56.0	57.0
Annual exceedance of standard		No	No	No
LEAD (Pb)				
Calendar quarter concentration (ug/m^3)				
Highest quarterly average	1.5 /c/	0.53	0.35	0.40
Number of excesses of standard		0	0	0

(Continued)

APPENDIX F: SAN FRANCISCO AIR CONTAMINANT SUMMARY 1980-1982 (Continued)

/a/ ppm: parts per million.
/b/ State standard, not to be equaled or exceeded.
/c/ National standard, not to be exceeded more than once per year (except for annual standards which are not to be exceeded).
/d/ Expected Annual Excess is a 3-year average of annual excesses of the National standard.
/e/ The California CO standard was revised to 20 ppm in January 1983.
/f/ Exceeding the SO_2 standard is a violation only if a concurrent excess of the state ozone or TSP standards occurs at the same station. Otherwise, the national standard of 0.14 ppm applies.
/g/ Number of observed excess days (measurements taken once every 6 days).
/h/ ug/m^3: micrograms/cubic meter

SOURCE: BAAQMD, 1980 - 1982, Contaminant and Weather Summaries, and CARB, 1980 - 1982, California Air Quality Data.

APPENDIX G: HIGH RISE OFFICE PROJECTS INCLUDED IN COMPARATIVE ENERGY ANALYSIS

EE Number	Project	Gross Square Feet
80.26	101 Montgomery	248,480
80.337	201 Spear	262,000
80.349	Spear/Main	308,000
81.61	Daon/Main	264,683
81.104	Washington/Montgomery	329,800
81.113	Central Plaza	353,160
81.183	Mission/Main	398,426
81.195	388 Market	342,900
81.493	71 Stevenson	324,600
81.705	580 California	340,000

SOURCE: Environmental Science Associates, Inc.